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Down Dead Wood Statistics for Maine Timberlands, 1995

Linda S. Heath
David C. Chojnacky

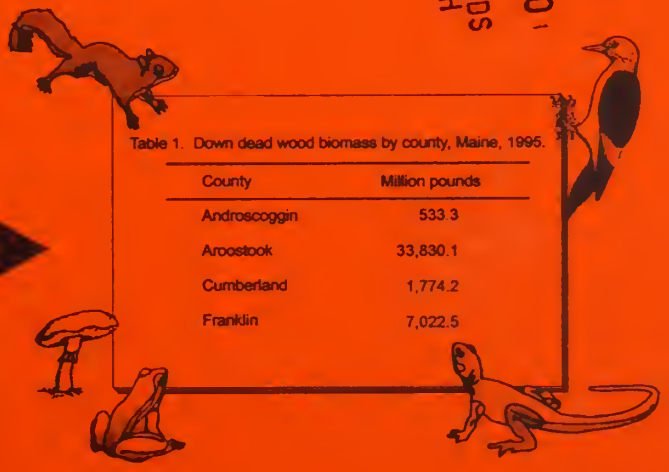

Table 1. Down dead wood biomass by county, Maine, 1995.

County	Million pounds
Androscoggin	533.3
Aroostook	33,830.1
Cumberland	1,774.2
Franklin	7,022.5

Abstract

Down dead wood (DDW) is important for its role in carbon and nutrient cycling, carbon sequestration, wildfire behavior, plant reproduction, and wildlife habitat. Down dead wood was measured for the first time during a forest survey of Maine by the USDA Forest Service in 1994-1996. Pieces greater than 3 feet long and greater than 3 inches in diameter at point of intersection were measured on line transects located on standard forest inventory plots. Large piles of DDW were sampled using the standard circular plot. Results are presented in 50 tables containing totals and per area estimates for volume, number of pieces, biomass, and carbon, summarized by attributes such as forest type group, owner group, species, and diameter class. This inventory indicates Maine timberlands contain approximately 7.2 ± 3% billion cubic feet in DDW pieces, and an additional 1.6 ± 28% billion cubic feet in piles of DDW. Together these contain 68.9 billion pounds (± 8%) of carbon. This is equivalent to an average of approximately 8,030 pounds of DDW biomass per acre.

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Introduction

Down dead wood (DDW), also known as downed coarse woody debris, is important for its role in carbon and nutrient cycling, carbon sequestration, wildfire behavior, stream channel morphology, plant reproduction, and wildlife habitat. Coarse woody debris and DDW decomposition have been characterized in selected forested areas of the eastern United States(see Gore and Patterson 1986; Mattson and others 1987; Arthur and others 1993; McCarthy and Bailey 1994; Tyrrell and Crow 1994; McGee and others 1999), but this is the first statistical report on the amount and distribution of DDW on a large scale. Large-scale estimates are needed to address regional and national issues such as increasing atmospheric concentrations of carbon dioxide, which may contribute to climate change. The purpose for the DDW inventory is to describe not only total DDW characteristics over the large survey area, but also to describe characteristics of DDW associated with individual plot data.

In this study, we present statistics of DDW on timberlands of the State of Maine. Two types of attributes are estimated, population or subpopulation totals and per area ratios where a total is divided by a corresponding area estimate. Each of these attributes is then categorized by plot-level classifications such as forest type or by piece-level classifications such as decay class. In some cases, attributes are categorized by both classifications. The ratio estimates are computed in lieu of means because sample means are not readily available from this study's double sampling design. Data were collected by the Forest Inventory and Analysis (FIA) of the USDA Forest Service's Northeastern Research Station from 1994 to 1996 in conjunction with the fourth periodic forest survey of Maine. See Griffith and Alerich (1996) for statistics of other forest attributes measured in this survey.

Sampling Design and Measurement Procedures

Sampling Design for Forest Inventory Plots

The sampling design for measuring DDW was superimposed on the existing forest inventory sampling design. The design used by FIA is double sampling for stratification (Cochran 1977). Land area is stratified by land use and timber volume class using classified points located on aerial photographs. A random subset of the photo points is selected for field measurement with sample size proportional to stratum size. The theory of sampling with partial replacement was adopted in this fourth successive survey of Maine to select a combination of previously measured and newly established ground plots. Thus, this survey consisted of remeasuring 2,192 ground plots that had been measured in the previous survey, and measuring 809 newly established ground plots.

The sample ground-plot design was a circular, 52.7 foot-radius (1/5-acre) plot. Distinct differences in land use, forest type, stand origin, or stand size on a plot were noted and mapped. The state of these four variables constituted a "condition". If a plot included more than one condition, each was appropriately weighted and handled as a "separate plot"

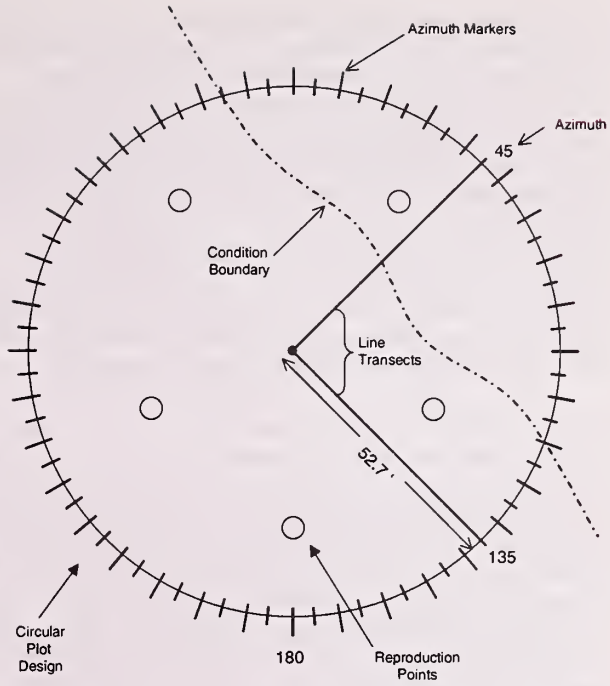

Figure 1.—Line transects and the fixed-radius forest inventory design for the fourth periodic inventory of Maine timberlands, 1994-1996.

in the analysis (Chojnacky 1998). Delineating the boundaries of these conditions determines the area of each condition on the plot. To qualify for measurement, the condition had to be at least 1 acre in size in the general vicinity of the plot. The mapped plot design is discussed in depth in Scott and Bechtold (1995), and further explored with respect to Maine in Arner (1998).

Sampling Design for DDW Pieces

Pieces of DDW were measured on two line transects emanating from plot center of the circular plot at azimuth 45 and 135 degrees and extending 52.7 feet. The second transect was located at 90 degrees to the first transect to reduce the orientation bias that occurs when all DDW pieces are aligned in the same direction (Van Wagner 1968; Pickford and Hazard 1978; Hazard and Pickford 1986). Measuring at fixed azimuths also can produce orientation bias, but protocols to ensure the elimination of bias would have been difficult to implement in this inventory. Orientation bias usually occurs when physical features are not randomly oriented, such as for parallel mountain ridges or logs that are blown down in the same direction. Considering the scope of this study, it is doubtful that any bias that might result from the use of fixed azimuths would affect the results. The line transects and circular plot design are shown in Figure 1.

Figure 1 also illustrates the effect that identifying conditions have on plot measurements. Because stand conditions are different, each condition present on a plot must have recorded stand data, for example, age of stand, forest type, and stocking. The line transects can be split in different ways

across conditions; in some cases, transects may not cross all conditions on a plot. For example, Figure 1 shows about half of one transect providing information on DDW for one condition, while the other half plus the second transect provide DDW information for the second condition. Qualifying pieces that crossed condition classes were assigned to the condition class that contains the center of the length of the piece. Note that a portion of the qualifying piece may continue off the fixed-area ground plot. The piece is measured as usual because the DDW sample is determined by the line transect rather than the fixed-area ground plot. See Shiver and Borders (1996) for more information on line transect inventories and forest inventory techniques.

The aerial photo points are considered the primary sampling unit (1st phase sample of double sample design); the circular plots and the line transects each are considered a secondary sampling unit (2nd phase sample). The line transect sampling frame is not the same as the circular plot sampling frame; however, both the circular plots and line transects are providing a sample of similar forest conditions (of the 1st phase sample point) as they both emanate from the same plot center. Thus, data collected on the line transects are categorized and compared with data collected on the circular plots.

Piece Measurements

DDW was tallied if it was intersected by the line intersect plane, was at least 3 inches in diameter, 3 feet long, and in decay class 1, 2, or 3 at the point of intersection. The decay classes and the characteristics of a piece by decay class are described in the Appendix. We measured piece length, diameter at the small and large end and point of intersection, and species. We also assigned a decay class and noted whether the piece was hollow, and if it was on the ground or above the forest floor, i.e., propped above the ground across large rocks.

A minimum transect diameter was chosen for several reasons. We were most interested in larger pieces that might take several years to decompose. We expected a large number of pieces of DDW in smaller diameter classes based on the results of Gore and Patterson (1986) in northern hardwoods in New Hampshire. Setting a minimum diameter allowed us to concentrate our resources on measuring pieces in our target population. Three inches was chosen as the minimum transect diameter because it corresponds to the lower measurement limit for the larger diameter classes (the 100-hour-fuel size class) in a traditional fuels inventory (see Brown 1974) to determine fuels loading for predicting fire behavior.

The small-end diameter was measured to ensure that the 3-inch limit was met; the large-end diameter was measured to provide a more accurate measure of volume (Pickford and Hazard 1978). Any part of the piece less than 3 inches in diameter was not measured; therefore the length of the piece only included that portion 3 inches or larger in diameter. Decay classes were assigned for use in estimating biomass and carbon. We ignored down wood that had lost its structure and shape (decay class 4) at the point of intersection because we were interested in pieces that would retain carbon for several years. Thus, an additional amount of extremely decayed DDW was not measured in this inventory.

Sampling and Measuring Piles of DDW

Occasionally, a great amount of DDW is found stacked systematically, for example, in residue piles from harvesting operations, beaver dams, and windrows. Measuring individually stacked pieces would be time consuming and physically impossible, so we measured the entire pile size. A pile included all of the pieces within the pile, regardless of the requirements for an individual piece. We measured all piles located on any portion of the 52.7-foot fixed-radius plot because these were expected to be rare events and because a pile usually is easy to see. A pile was determined to have one of four shapes: half-sphere, half-cylinder, one-half frustrum of a cone, or irregular solid. Length, width, and height were measured for the appropriate shape to estimate pile volume. The minimum measurement requirement for a pile was 1 foot.

Compiling DDW Data

The first step in data compilation for the double sampling design is expression of sampled attributes on a per-unit-area basis. These are then summed for a population area and multiplied by the population's area to obtain an attribute total. The line transect formulas conveniently yield attribute estimates on a per-unit-area basis (see deVries 1986, p. 273):

$$X = \frac{\pi}{2L} \sum_{i=1}^{n} \frac{x_i}{l_i} \qquad (1)$$

where

X = per-unit-area population attribute estimate,
L = length of sample transect line,
x_i = measured or calculated attribute for piece i,
l_i = length of piece i, and,
n = number of pieces intersecting with transect of length L.

The derivation of this formula is based on the assumption that the pieces are randomly oriented throughout the sample area. Pieces that fall to the ground due to harvesting, particularly cable logging, or because of windstorms often are positioned primarily in one direction. Warren and Olsen (1964) and Van Wagner (1968) suggested that the effect of orientation bias can be reduced by running sample line intersects in more than one direction. For the Maine survey, we chose two transects on each plot. They emanated from a common point and were located at right angles to each other. Both transects on a plot are considered as one line or as one 2nd phase sample unit. Sampling with replacement was assumed. A long piece that was crossed by both transects was counted as an independent sample on each transect.

Volume per Acre

A number of formulas can be used to estimate cubic-foot volume depending on the assumption of the shape of the piece. For instance, Van Wagner (1968) discussed a simplified formula/procedure for estimating the volume per

unit area that assumed the piece is shaped like a cylinder. We assumed that the shape of a piece can be characterized by the frustum of a paraboloid, and used Smalian's formula (Husch and others 1972) to estimate volume. This formula requires measurement of both the large- and small-end diameters. If diameter is measured in inches, individual piece volume (in cubic feet) can be calculated as

$$v_i = \frac{\pi}{8B}\left(d_i^2 + D_i^2\right) l_i$$

where (2)

v = volume of piece i (cubic feet),
B = 144, factor to convert square inches to square feet,
d_i = small-end diameter of piece i (inches),
D_i = large-end diameter of piece i (inches), and
l_i = length of piece i (feet)

Letting the attribute of interest, v, be volume of the individual piece in cubic feet, the estimator for volume per acre is:

$$V = \frac{A\pi}{2L}\sum_{i=1}^{n}\frac{v_i}{l_i}$$

where (3)

V = volume per acre (cubic feet/acre),
A = 43,560, the number of square feet in an acre,
L = length of sample transect line (feet),
v_i = volume of piece i (cubic feet),
l_i = length of piece i (feet), and,
n = number of pieces intersecting with transect of length L.

Biomass and Carbon per Acre

Volume is converted to biomass by multiplying by specific gravity (density) of the wood. The estimator for biomass per acre follows directly from volume per acre:

$$B = \frac{A\pi}{2L}\sum_{i=1}^{n} S_i\left(\frac{v_i}{l_i}\right)$$

where (4)

B = biomass per acre (lb dry weight per acre),
S_i = density of piece based on species and decay class of piece, and other variables as listed previously.

Specific gravity for individual species was compiled from several sources. Specific gravity decreases as the piece decays, so it was adjusted according to the decay class of a piece. The specific gravity of pieces in decay class 1 are thought to be 90 percent of that of a live tree, 70 percent in decay class 2, and 40 percent in decay class 3. These estimates are based on results of Arthur and others (1993) and unpublished data collected on the Penobscot Experimental Forest, Bradley, Maine. Since piece diameters also included bark (if any), the specific gravity of the bark was assumed to be the same as that of the wood.

In the Northeast, softwoods are approximately 52.1 percent carbon and hardwoods are 49.8 percent (Birdsey 1992). Carbon estimates were obtained by multiplying biomass by these two conversion factors. Pieces of unknown type were treated as hardwoods.

Number of Pieces per Acre

Using deVries' (1986: 258) equation for any attribute:

$$NP = \frac{A\pi}{2L}\sum_{i=1}^{n}\frac{x_i}{l_i}$$

where (5)

NP = number of pieces per acre,
x_i = 1 for each piece, and other variables as listed previously

Piles

Volume of a pile of dead wood was calculated using the equation associated with the appropriate shape (see Little 1982), and multiplied by the estimated proportion of the pile that falls on the plot. Piles of wood naturally contain air spaces because cylindrically shaped objects like logs and branches do not fit together exactly. Piles of increasingly larger pieces contain a higher proportion of air than piles of smaller pieces. Gross pile volume as estimated by shape volume (Little 1982) was multiplied by 0.348 to derive an estimated net volume. For estimates of biomass, the volume calculation was multiplied by the specific gravity for the estimated forest type of the circular plot. Decay class 2 was assumed. Carbon was calculated as 50 percent of biomass.

Estimating Attributes Across the Landscape

At times we could not collect data on line transects because of deep snow or other factors. Of the 2,659 field plots on timberland measured for standard forest inventory data, only 2,493 were measured for DDW. Figure 2 shows the location of the plots and indicates which plots were not measured for DDW. Although some plots in all counties were not inventoried for DDW, three counties had noticeably fewer DDW plots than the total number inventoried. In Androscoggin, Knox, and York Counties, 61, 89, and 74 percent of the inventory plots were sampled for DDW, respectively. In other counties, more than 90 percent of the field plots were inventoried for DDW. We expect some bias due to missing plots, but the amount should be small for statewide statistics.

If all plots had been measured for DDW, we would have obtained the same acreage values as those calculated by FIA. Because of missing plots, we used a smaller 2nd phase sample size in double sampling calculations (Chojnacky 1998). This gave a Maine timberland area of 16.856 million acres, or 81,000 fewer acres than than the FIA estimate. However, a 95-percent confidence interval for our estimate is ±168,000 acres, so the two estimates are comparable.

DDW was calculated for each plot-condition on a per-acre basis using the length of line associated with each condition in the circular plot. Both transects within the plot were treated like one continuous transect and per-area estimates were calculated (see deVries 1986: 255). The per-unit-area estimates were treated as phase II samples and combined

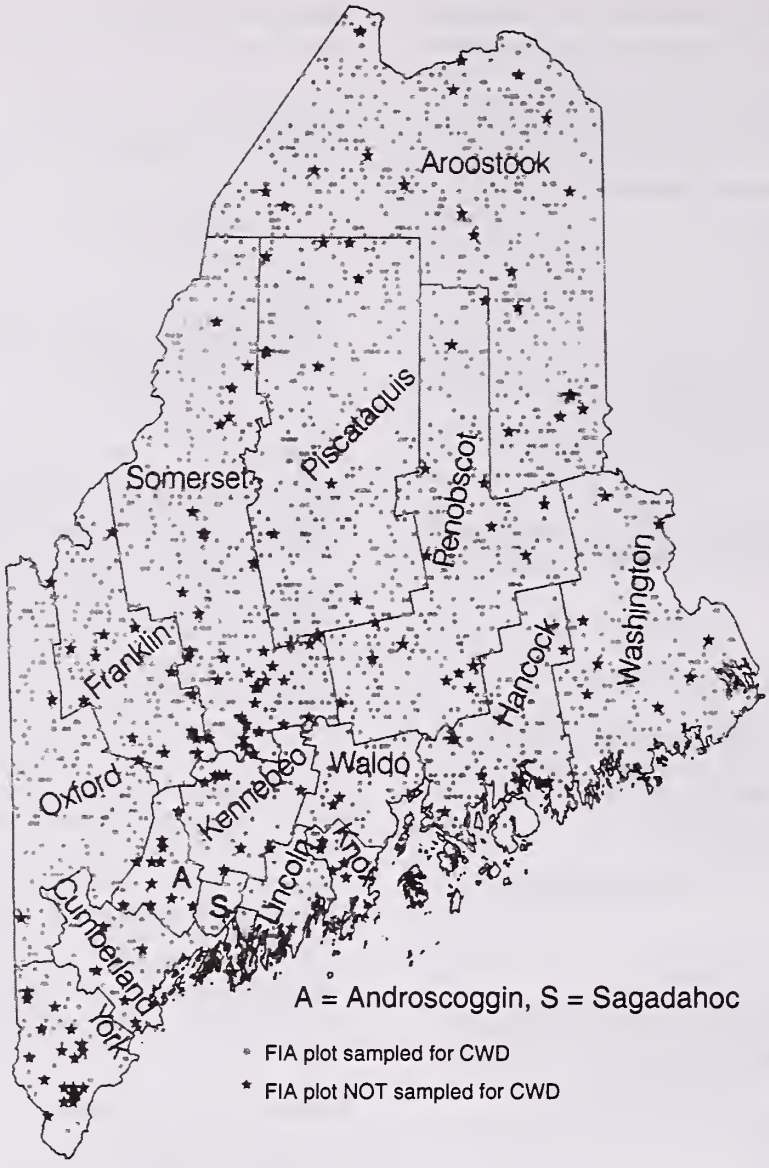

Figure 2.—Location of timberland field plots.

with phase I data in double sampling. Therefore, area and DDW attribute totals, including pile data, were produced according to double sampling for stratification formulas (Cochran 1977). Per-acre estimates were calculated by dividing the total of an attribute by the appropriate area. Area for plot-level estimates was a straightforward double sampling calculation. However, area associated with piece size or species group also was calculated by first partitioning plot area into species or size proportions. Thus, if a plot featured only one piece, the entire area of the plot was assigned to that piece and, therefore, to the species group of that piece.

A drawback with this method is that results cannot indicate the length of sample line on which the DDW estimates are based, so our estimates of precision do not necessarily reflect the length of the sample transects. Instead, the estimate of precision reflects the plot-condition area ratio and not the transect length per plot-condition. Volume per acre can be calculated for a short transect length on a plot-condition, but the results show only the per-acre estimate, that is, they do not reflect the fact that there was less transect length on one of the plot-conditions.

Reliability of the Estimates

Statistically-based data are valuable because they can provide an estimate of reliability. In the tables, sampling error, along with sample size, is presented for each estimate. Sampling error is calculated as the square root of an attribute's variance (from double sampling), divided by the attribute estimate. This calculation is the same as that in FIA's in live tree and acreage tables (see Griffith and Alerich 1996). Sample size is presented as the number of ground

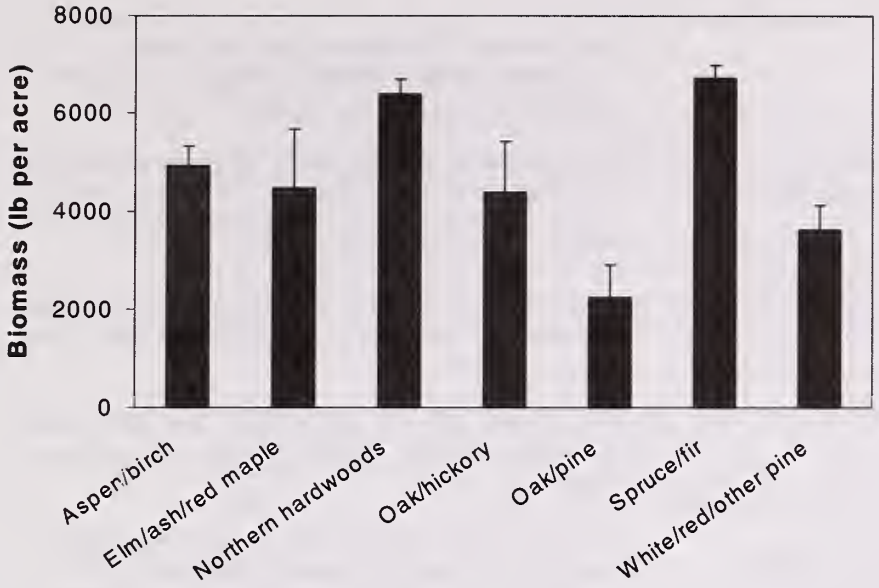

Figure 3.—Biomass per acre (dry weight) by forest type for DDW pieces for Maine timberlands, 1995. Error bars indicate the upper confidence interval for a confidence level of 67 percent.

plots sampled for DDW, or as the number of pieces. (This sample size is not strictly part of the double sampling calculations; it is included only as point of reference to indicate plots actually measured for an attribute estimate. For per-area-ratio estimates, n is generally the number of plots in the area estimate of the denominator.) Each ground plot represents a sample size of 1. When a plot has been identified as having more than one condition, each plot-condition is assigned a sample size equal to the ratio of the area of the plot-condition to the area of the entire plot. For example, a condition that occupies half the area in a plot has a sample size of 0.5. If the line transect crossed only part of the conditions on a plot, the DDW estimate only pertained to that portion of the plot, and only that portion of the plot was counted in the sample size. Thus, although 2,493 ground plots were sampled for DDW, some plot-conditions were not sampled for DDW. The sampled portion of the plot has a sample size of less than 1. Because of the missing plot-conditions, the total sample size—rounded to nearest whole plot—is 2,455.

Confidence limits at the 67 percent (1 standard deviation) confidence level can be estimated easily from the information in the tables. The upper limit is equal to the sampling error (in percent) multiplied by the attribute, and then added to the attribute. The lower limit also equals the sampling error multiplied by the attribute, but then is subtracted from the attribute. Limits for other confidence levels can be readily calculated using the information provided along with a table of the critical values of the *t* distribution.

The sampling error does not indicate the degree of confidence in the assumptions underlying the measurements or in the calculations used to estimate the attribute (X in Eq. 1) of each piece or pile. For instance, there is little information on the ratio of air to solid wood in the calculated volume of a pile of dead wood. A small change in this ratio can have a large effect on the amount of wood volume, biomass, or carbon in the piles.

Using the Tables

Tables 1-50 include estimates of volume, biomass, carbon, and number of DDW pieces and piles. Total DDW is presented in Tables 1-3; totals of DDW pieces estimated for plot-level characteristics are presented in Tables 4-14, and totals estimated for piece-level characteristics are presented in Tables 15-23. Piles are tallied in Tables 24-26. The areas associated with DDW totals are presented in Tables 27-31. Dividing totals by the appropriate area estimate gives per-acre estimates. Some per-acre estimates, including sampling error and sample size, are presented in Tables 32-50.

An example of the use of per-acre data is given in Figure 3. Spruce-fir and northern hardwoods forest types have similar amounts of DDW biomass per acre—more than 6,000 lb per acre each. The oak/pine forest type has the least amount of DDW biomass per acre, about 2,200 lb per acre.

By necessity, areas for tables featuring species group are calculated differently from those associated with other tables. Attributes such as forest type or county occur over a particular area of land. Species apply only to individual trees and it is not known how much area an individual tree occupies. We estimate an area to associate with a species group by proportioning the plot area by species group in proportion to the biomass within the respective attribute (either diameter or decay class). Thus, per-acre estimates in the species group tables are based only on areas that featured that type of DDW. In other words, the estimate represents the average amount of DDW that would be expected to occur given that DDW is known to occur in that area. All other tables of per-acre estimates are based on area classifications that may or may not feature DDW.

This inventory indicates there are approximately 7.2 billion cubic feet (± 3%) of volume in pieces of DDW. An additional 1.6 billion cubic feet (± 28%) are in piles of DDW. Together these contain 68.9 billion pounds (± 8%) of carbon. This

equates to an average of approximately 8,030 pounds of DDW biomass per acre.

Acknowledgments

We acknowledge the tremendous effort of the Forest Inventory and Analysis of the Northeastern Research Station in collecting the data and providing advice on their compilation methods. We also acknowledge the contributions of Neil McKay (retired), Karen Waddell, and Tim Max, Pacific Northwest Research Station. We thank Todd Caldwell, Phillip deMaynadier, Richard Dressler, Jeff Gove, Kenneth Lawson, Will McWilliams, Renee O'Brien, Dave Randall, Chip Scott, MaryEllen Wickett, and Sharon Woudenberg for their excellent review comments.

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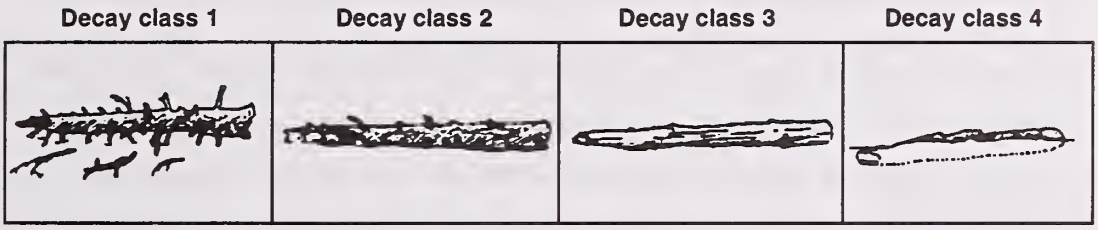
Appendix

Decay classes

The following information was adapted from protocols for determining decay class that were developed by Cline and others (1980) and those used by the Pacific Northwest Research Station's Inventory and Monitoring Program.

Do not kick or chop pieces to determine their decay class. First, determine whether a piece is in decay class 4 by probing it with a metal pin (the thumbnail on a diameter tape may work). If the piece is not penetrated through to the center, it is decay class 1, 2, or 3. Should a piece feature more than one decay class, record only the class at the point of intersection.

Use the following illustration and table as a guide. The illustration should be used in conjunction with the table particularly with respect to structural integrity and texture of rotten portions. DO NOT tally pieces in decay class 4 at the point of intersection. When tallying a piece, note that the portion sampled ends where decay class 4 begins.



Characteristics of downed pieces by decay class

Decay class	Structural integrity	Texture of rotten portions	Bark	Remarks
1	Sound	Intact	Intact	Cannot penetrate wood with thumbnail
2	Sound to somewhat rotten; branch stubs attached firmly	Partly soft	On/off	
3	Rotten, branch stubs pull out moist	Soft, perhaps even squishy if detached	Sloughing or	Thumbnail penetrates easily; bark may be intact
4	None; branch stubs have rotted down	"Doughy" when wet, fluffy	Detached or absent	Bark on certain species may be intact

Index to Tables

Table 1. Total down dead wood (piece and pile) statistics by county, Maine, 1995

County	Attribute				
	Volume	Biomass	Carbon	Number of piles	Area
	- Million cubic feet -	- Million lb -	- Million lb - *SE, n*	- Thousands -	- Thousand acres -
Androscoggin	29.9 *34%, n=16*	533.3 *39%, n=16*	271.2 *39%, n=16*	0.0 *-%, n=16*	184.5 *9.1%, n=16*
Aroostook	2,238.4 *15%, n=568*	33,830.1 *21%, n=568*	17,203.4 *21%, n=568*	0.4 *39%, n=568*	3,744.0 *0.9%, n=568*
Cumberland	98.4 *31%, n=49*	1,774.2 *34%, n=49*	908.1 *35%, n=49*	0.0 *100%, n=49*	364.7 *4.2%, n=49*
Franklin	465.0 *9%, n=150*	7,022.5 *11%, n=150*	3,569.9 *11%, n=150*	0.1 *54%, n=150*	969.7 *2.5%, n=150*
Hancock	244.9 *14%, n=130*	3,768.8 *14%, n=130*	1,931.6 *14%, n=130*	0.1 *72%, n=130*	849.8 *2.8%, n=130*
Kennebec	221.0 *21%, n=51*	3,154.6 *22%, n=51*	1,615.7 *22%, n=51*	0.1 *72%, n=51*	404.7 *3.2%, n=51*
Knox	17.3 *31%, n=23*	255.3 *33%, n=23*	130.5 *32%, n=23*	0.0 *100%, n=23*	166.9 *6.5%, n=23*
Lincoln	47.3 *25%, n=34*	751.4 *29%, n=34*	383.9 *29%, n=34*	0.0 *100%, n=34*	222.4 *5.4%, n=34*
Oxford	563.8 *24%, n=177*	10,153.3 *31%, n=177*	5,130.5 *31%, n=177*	0.1 *71%, n=177*	1,205.4 *1.7%, n=177*

(Continued)

Table 1. (Continued)

County	Attribute				
	Volume	Biomass	Carbon	Number of piles	Area
	- Million cubic feet -	- Million lb -	- Million lb - *SE, n*	- Thousands -	- Thousand acres -
Penobscot	604.7 *14%, n=272*	8,352.3 *17%, n=272*	4,251.6 *17%, n=272*	0.1 *58%, n=272*	1,838.3 *1.3%, n=272*
Piscataquis	1,732.0 *8%, n=333*	25,065.4 *10%, n=333*	12,835.5 *10%, n=333*	0.2 *33%, n=333*	2,209.8 *0.8%, n=333*
Sagadahoc	32.7 *31%, n=18*	518.0 *35%, n=18*	264.1 *35%, n=18*	0.0 *-%, n=18*	123.4 *6.5%, n=18*
Somerset	1,636.2 *12%, n=326*	24,368.3 *17%, n=326*	12,408.5 *16%, n=326*	0.2 *44%, n=326*	2,343.9 *0.8%, n=326*
Waldo	122.0 *16%, n=55*	1,923.3 *19%, n=55*	982.1 *19%, n=55*	0.1 *49%, n=55*	372.9 *2.8%, n=55*
Washington	731.9 *30%, n=207*	12,316.2 *39%, n=207*	6,226.6 *38%, n=207*	0.2 *62%, n=207*	1,383.3 *1.5%, n=207*
York	97.1 *26%, n=47*	1,573.8 *25%, n=47*	805.8 *25%, n=47*	0.0 *-%, n=47*	472.0 *5.5%, n=47*
Total	8,882.6 *6%, n=2455*	135,360.9 *8%, n=2455*	68,918.9 *8%, n=2455*	1.6 *16%, n=2455*	16,855.8 *0.5%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 2. Total down dead wood (piece and pile) statistics by forest type group, Maine, 1995

Forest type group	Attribute				
	Volume	Biomass	Carbon	Number of piles	Area
	- Million cubic feet -	- Million lb -	- Million lb - *SE, n*	- Thousands -	- Thousand acres -
Aspen/birch	1,136.0 *17%, n=331*	17,154.2 *21%, n=331*	8,692.9 *20%, n=331*	0.3 *39%, n=331*	2,252.3 *5.1%, n=331*
Elm/ash/red maple	102.6 *30%, n=45*	1,433.0 *31%, n=45*	734.2 *31%, n=45*	0.0 *-%, n=45*	320.6 *14.9%, n=45*
Northern hardwoods	3,847.1 *12%, n=936*	66,935.3 *15%, n=936*	33,803.2 *15%, n=936*	0.8 *25%, n=936*	6,433.4 *2.4%, n=936*
Oak/hickory	109.9 *28%, n=59*	1,964.6 *27%, n=59*	1,001.2 *27%, n=59*	0.0 *-%, n=59*	450.3 *12.7%, n=59*
Oak/pine	21.8 *39%, n=19*	301.2 *37%, n=19*	154.0 *38%, n=19*	0.0 *-%, n=19*	134.4 *22.3%, n=19*
Spruce/fir	3,338.5 *5%, n=891*	42,639.4 *5%, n=891*	21,997.5 *5%, n=891*	0.4 *30%, n=891*	5,986.2 *2.4%, n=891*
White/red/other pine	326.6 *14%, n=175*	4,933.1 *16%, n=175*	2,535.9 *16%, n=175*	0.1 *51%, n=175*	1,278.6 *7.1%, n=175*
Total	8,882.6 *6%, n=2455*	135,360.9 *8%, n=2455*	68,918.9 *8%, n=2455*	1.6 *16%, n=2455*	16,855.8 *0.5%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 3. Total down dead wood (piece and pile) statistics by owner group, Maine, 1995

Owner group	Attribute				
	Volume	Biomass	Carbon	Number of piles	Area
	- Million cubic feet -	- Million lb -	- Million lb - *SE, n*	- Thousands -	- Thousand acres -
Forest industry	4,291.6 *6%, n=1090*	61,820.0 *7%, n=1090*	31,547.7 *7%, n=1090*	0.5 *27%, n=1090*	7,328.2 *2.1%, n=1090*
Other private	4,251.3 *11%, n=1272*	68,775.1 *14%, n=1272*	34,923.4 *14%, n=1272*	1.1 *21%, n=1272*	8,901.7 *1.8%, n=1272*
Public	339.7 *18%, n=92*	4,765.7 *20%, n=92*	2,447.8 *20%, n=92*	0.0 *100%, n=92*	625.9 *10.1%, n=92*
Total	8,882.6 *6%, n=2455*	135,360.9 *8%, n=2455*	68,918.9 *8%, n=2455*	1.6 *16%, n=2455*	16,855.8 *0.5%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 4. Volume of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet) 0 - 49	50 - 99	100 - 149	150 - 199	200+	All classes
	Million cubic feet *SE, n*					
Aspen/birch	346.7 *17%, n=107*	110.2 *24%, n=52*	163.6 *21%, n=73*	137.9 *18%, n=68*	50.8 *26%, n=31*	809.1 *9%, n=331*
Elm/ash/red maple	18.9 *58%, n=14*	33.6 *36%, n=16*	25.6 *83%, n=10*	23.3 *62%, n=4*	1.2 *-%, n=1*	102.6 *30%, n=45*
Northern hardwoods	402.3 *14%, n=127*	543.9 *12%, n=180*	942.5 *9%, n=343*	614.9 *11%, n=225*	203.5 *19%, n=61*	2,707.1 *5%, n=936*
Oak/hickory	0.0 *-%, n=0*	51.2 *49%, n=14*	28.5 *50%, n=22*	15.9 *35%, n=17*	14.4 *69%, n=6*	109.9 *28%, n=59*
Oak/pine	2.0 *72%, n=3*	0.0 *-%, n=0*	2.6 *74%, n=3*	10.5 *52%, n=10*	6.7 *91%, n=3*	21.8 *39%, n=19*
Spruce/fir	725.6 *11%, n=160*	559.5 *13%, n=161*	777.5 *10%, n=220*	598.8 *10%, n=197*	513.4 *12%, n=153*	3,174.9 *4%, n=891*
White/red/other pine	4.4 *74%, n=3*	33.6 *32%, n=21*	76.7 *24%, n=42*	107 *31%, n=55*	84.6 *22%, n=54*	306.3 *14%, n=175*
Total	1,499.9 *7%, n=414*	1,332.0 *8%, n=444*	2,016.8 *6%, n=712*	1,508.4 *6%, n=575*	874.6 *9%, n=309*	7,231.7 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 5. Volume of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			All owners
	Forest industry	Other private	Public	
	Million cubic feet *SE, n*			
Aspen/birch	391.8 *15%, n=120*	395.2 *13%, n=194*	22.1 *40%, n=17*	809.1 *9%, n=331*
Elm/ash/red maple	24.7 *52%, n=10*	44.0 *28%, n=32*	33.9 *73%, n=3*	102.6 *30%, n=45*
Northern hardwoods	1,516.1 *7%, n=469*	1,070.9 *8%, n=439*	120.1 *33%, n=28*	2,707.1 *5%, n=936*
Oak/hickory	0.3 *100%, n=2*	108.8 *28%, n=54*	0.9 *100%, n=3*	109.9 *28%, n=59*
Oak/pine	0.0 *-%, n=1*	21.8 *39%, n=17*	0.0 *-%, n=1*	21.8 *39%, n=19*
Spruce/fir	1,832.3 *6%, n=453*	1,213.0 *8%, n=402*	129.6 *24%, n=36*	3,174.9 *4%, n=891*
White/red/other pine	74.8 *21%, n=36*	223.4 *18%, n=135*	8.1 *72%, n=4*	306.3 *14%, n=175*
Total	3,840.0 *4%, n=1090*	3,077.1 *4%, n=1272*	314.6 *18%, n=92*	7,231.7 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 6. Number of pieces of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet)					All classes
	0 - 49	50 - 99	100 - 149	150 - 199	200+	
	Million pieces *SE, n*					
Aspen/birch	183.2 *14%, n=107*	47.5 *24%, n=52*	82.1 *19%, n=73*	64.3 *18%, n=68*	28.8 *23%, n=31*	405.8 *8%, n=331*
Elm/ash/red maple	7.7 *53%, n=14*	18.5 *31%, n=16*	5.7 *51%, n=10*	5.8 *52%, n=4*	0.4 *-%, n=1*	38.1 *21%, n=45*
Northern hardwoods	232.2 *17%, n=127*	236.6 *11%, n=180*	374.8 *8%, n=343*	204.4 *10%, n=225*	68.8 *17%, n=61*	1,116.7 *5%, n=936*
Oak/hickory	0.0 *-%, n=0*	24.4 *42%, n=14*	12.2 *38%, n=22*	10.4 *40%, n=17*	4.1 *68%, n=6*	51.2 *23%, n=59*
Oak/pine	2.0 *69%, n=3*	0.0 *-%, n=0*	1.1 *85%, n=3*	8.2 *44%, n=10*	6.7 *83%, n=3*	18 *38%, n=19*
Spruce/fir	340.9 *11%, n=160*	208 *12%, n=161*	327.8 *10%, n=220*	195.5 *10%, n=197*	187.3 *11%, n=153*	1,259.5 *4%, n=891*
White/red/other pine	3.6 *80%, n=3*	19.9 *31%, n=21*	37.0 *21%, n=42*	58.6 *22%, n=55*	33.9 *20%, n=54*	153.1 *12%, n=175*
Total	769.6 *8%, n=414*	554.9 *7%, n=444*	840.7 *5%, n=712*	547.3 *6%, n=575*	330.0 *8%, n=309*	3,042.5 *2%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 7. Number of pieces of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			All owners
	Forest industry	Other private	Public	
	Million pieces *SE, n*			
Aspen/birch	178.0 *13%, n=120*	208.5 *12%, n=194*	19.3 *36%, n=17*	405.8 *8%, n=331*
Elm/ash/red maple	9.3 *49%, n=10*	24.8 *25%, n=32*	4.1 *72%, n=3*	38.1 *21%, n=45*
Northern hardwoods	591.5 *8%, n=469*	490.6 *7%, n=439*	34.6 *28%, n=28*	1,116.7 *5%, n=936*
Oak/hickory	0.2 *100%, n=2*	50.2 *23%, n=54*	0.8 *100%, n=3*	51.2 *23%, n=59*
Oak/pine	0.0 *-%, n=1*	18.0 *38%, n=17*	0.0 *-%, n=1*	18.0 *38%, n=19*
Spruce/fir	701.2 *6%, n=453*	513.7 *8%, n=402*	44.6 *26%, n=36*	1,259.5 *4%, n=891*
White/red/other pine	30.2 *21%, n=36*	119.3 *14%, n=135*	3.6 *60%, n=4*	153.1 *12%, n=175*
Total	1,510.3 *4%, n=1090*	1,425.1 *4%, n=1272*	107.1 *16%, n=92*	3,042.5 *2%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 8. Quadratic mean large-end diameter of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet) 0 - 49	50 - 99	100 - 149	150 - 199	200+	All classes
	Inches *SE, n*					
Aspen/birch	6.4 *9%, n=107*	6.2 *10%, n=52*	6.1 *8%, n=73*	6.6 *12%, n=68*	5.5 *13%, n=31*	6.3 *5%, n=331*
Elm/ash/red maple	6.9 *11%, n=14*	6.1 *17%, n=16*	7.3 *25%, n=10*	8.2 *19%, n=4*	6.5 *-%, n=1*	6.8 *11%, n=45*
Northern hardwoods	6.3 *6%, n=127*	6.9 *7%, n=180*	6.9 *4%, n=343*	7.1 *6%, n=225*	7.0 *10%, n=61*	6.8 *3%, n=936*
Oak/hickory	0.0 *-%, n=0*	6.4 *12%, n=14*	6.5 *19%, n=22*	5.2 *10%, n=17*	9.8 *19%, n=6*	6.5 *12%, n=59*
Oak/pine	4.8 *18%, n=3*	0.0 *-%, n=0*	6.4 *14%, n=3*	5.4 *28%, n=10*	6.3 *10%, n=3*	5.7 *16%, n=19*
Spruce/fir	6.6 *6%, n=160*	6.6 *6%, n=161*	6.6 *5%, n=220*	7.2 *6%, n=197*	6.6 *5%, n=153*	6.7 *3%, n=891*
White/red/other pine	5.7 *42%, n=3*	5.8 *15%, n=21*	6.0 *11%, n=42*	5.7 *12%, n=55*	6.5 *14%, n=54*	6.0 *7%, n=175*
Total	6.5 *4%, n=414*	6.6 *4%, n=444*	6.6 *3%, n=712*	6.9 *4%, n=575*	6.7 *4%, n=309*	6.6 *2%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 9. Quadratic mean large-end diameter of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			
	Forest industry	Other private	Public	All owners
	Inches *SE, n*			
Aspen/birch	6.4 *7%, n=120*	6.3 *8%, n=194*	5.4 *15%, n=17*	6.3 *5%, n=331*
Elm/ash/red maple	7.1 *8%, n=10*	6.2 *13%, n=32*	9.5 *8%, n=3*	6.8 *11%, n=45*
Northern hardwoods	6.9 *4%, n=469*	6.6 *5%, n=439*	7.2 *14%, n=28*	6.8 *3%, n=936*
Oak/hickory	4.0 *0%, n=2*	6.6 *12%, n=54*	5.7 *0%, n=3*	6.5 *12%, n=59*
Oak/pine	0.0 *-%, n=1*	5.7 *16%, n=17*	0.0 *-%, n=1*	5.7 *16%, n=19*
Spruce/fir	6.8 *4%, n=453*	6.6 *4%, n=402*	6.8 *12%, n=36*	6.7 *3%, n=891*
White/red/other pine	6.5 *9%, n=36*	5.8 *8%, n=135*	7.1 *40%, n=4*	6.0 *7%, n=175*
Total	6.8 *2%, n=1090*	6.5 *3%, n=1272*	6.8 *8%, n=92*	6.6 *2%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 10. Biomass (dry weight) of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet) 0 - 49	50 - 99	100 - 149	150 - 199	200+	All classes
	Million pounds *SE, n*					
Aspen/birch	4,971.9 *17%, n=107*	1,445.7 *23%, n=52*	2,098.7 *20%, n=73*	1,867 *18%, n=68*	706.3 *26%, n=31*	11,089.5 *10%, n=331*
Elm/ash/red maple	316.5 *61%, n=14*	447.1 *37%, n=16*	369.7 *85%, n=10*	276.3 *64%, n=4*	23.4 *-%, n=1*	1,433.0 *31%, n=45*
Northern hardwoods	6,391.8 *15%, n=127*	8,313.8 *13%, n=180*	13,691.4 *9%, n=343*	9,171.4 *11%, n=225*	3,491.4 *22%, n=61*	41,059.7 *5%, n=936*
Oak/hickory	0.0 *-%, n=0*	860.8 *45%, n=14*	561.2 *51%, n=22*	269.9 *37%, n=17*	272.6 *77%, n=6*	1,964.6 *27%, n=59*
Oak/pine	30.3 *67%, n=3*	0.0 *-%, n=0*	45.3 *78%, n=3*	152.5 *54%, n=10*	73.1 *90%, n=3*	301.2 *37%, n=19*
Spruce/fir	9,643.2 *11%, n=160*	7,218.9 *13%, n=161*	9,585.6 *10%, n=220*	7,514.5 *11%, n=197*	6,185.9 *12%, n=153*	40,148.1 *5%, n=891*
White/red/other pine	96.1 *79%, n=3*	442.2 *31%, n=21*	1,098.5 *25%, n=42*	1,764.3 *33%, n=55*	1,202.7 *23%, n=54*	4,603.9 *15%, n=175*
Total	21,449.8 *8%, n=414*	18,728.5 *8%, n=444*	27,450.5 *6%, n=712*	21,015.9 *7%, n=575*	11,955.4 *9%, n=309*	100,600.0 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 11. Biomass (dry weight) of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			
	Forest industry	Other private	Public	All owners
	Million pounds *SE, n*			
Aspen/birch	5,230.2 *15%, n=120*	5,566.3 *13%, n=194*	293.1 *39%, n=17*	11,089.5 *10%, n=331*
Elm/ash/red maple	376.4 *56%, n=10*	580.7 *29%, n=32*	476.0 *74%, n=3*	1,433.0 *31%, n=45*
Northern hardwoods	23,070.0 *7%, n=469*	16,314.2 *8%, n=439*	1,675.6 *29%, n=28*	41,059.7 *5%, n=936*
Oak/hickory	4.6 *100%, n=2*	1,946.7 *27%, n=54*	13.2 *100%, n=3*	1,964.6 *27%, n=59*
Oak/pine	0.0 *-%, n=1*	301.2 *37%, n=17*	0.0 *-%, n=1*	301.2 *37%, n=19*
Spruce/fir	22,645.8 *7%, n=453*	15,914.5 *8%, n=402*	1,587.8 *25%, n=36*	40,148.1 *5%, n=891*
White/red/other pine	977.9 *21%, n=36*	3,516.3 *19%, n=135*	109.7 *75%, n=4*	4,603.9 *15%, n=175*
Total	52,304.8 *4%, n=1090*	44,139.9 *5%, n=1272*	4,155.4 *18%, n=92*	100,600.0 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 12. Biomass (dry weight) of down dead wood by forest type group, owner group, and decay class, Maine, 1995[a]

Forest type group	Owner group	Plots with no DDW	Decay class 1	2	3	All classes
		-- Number --	Million pounds *SE, n*			
Aspen/birch	Forest industry	23	1,004.2 *31%, n=20*	2,286.9 *16%, n=63*	1,939.1 *17%, n=77*	5,230.2 *15%, n=120*
	Other private	50	722.0 *25%, n=25*	3,000.9 *16%, n=89*	1,843.5 *15%, n=103*	5,566.3 *13%, n=194*
	Public	6	72.8 *76%, n=3*	109.8 *54%, n=7*	110.5 *45%, n=9*	293.1 *39%, n=17*
Elm/ash/red maple	Forest industry	3	0.0 *-%, n=0*	272.8 *69%, n=5*	103.6 *82%, n=3*	376.4 *56%, n=10*
	Other private	10	144.4 *60%, n=4*	158.7 *31%, n=13*	277.5 *33%, n=16*	580.7 *29%, n=32*
	Public	1	135.8 *100%, n=1*	179.6 *82%, n=2*	160.6 *80%, n=2*	476.0 *74%, n=3*
Northern hardwoods	Forest industry	91	4,628.8 *15%, n=102*	10,098 *10%, n=230*	8,343.3 *7%, n=289*	23,070.0 *7%, n=469*
	Other private	100	2,982.0 *17%, n=84*	7,614.6 *13%, n=203*	5,717.6 *10%, n=226*	16,314.2 *8%, n=439*
	Public	6	363.2 *51%, n=9*	614.6 *38%, n=14*	697.8 *45%, n=11*	1,675.6 *29%, n=28*

(Continued)

Table 12. (Continued)

Forest type group	Owner group	Plots with no DDW	Decay class 1	2	3	All classes
		-- Number --	Million pounds *SE, n*			
Oak/hickory	Forest industry	1	0.0 *-%, n=0*	4.6 *100%, n=1*	0.0 *-%, n=0*	4.6 *100%, n=2*
	Other private	19	414.1 *38%, n=13*	1,202.2 *32%, n=23*	330.4 *30%, n=19*	1,946.7 *27%, n=54*
	Public	2	0.0 *-%, n=0*	13.2 *100%, n=1*	0.0 *-%, n=0*	13.2 *100%, n=3*
Oak/pine	Forest industry	1	0.0 *-%, n=0*	0.0 *-%, n=0*	0.0 *-%, n=0*	0.0 *-%, n=1*
	Other private	2	19.1 *59%, n=3*	190.1 *49%, n=7*	92.0 *42%, n=8*	301.2 *37%, n=17*
	Public	1	0.0 *-%, n=0*	0.0 *-%, n=0*	0.0 *-%, n=0*	0.0 *-%, n=1*
Spruce/fir	Forest industry	58	2,998.0 *15%, n=81*	10,527.2 *9%, n=262*	9,120.7 *7%, n=330*	22,645.8 *7%, n=453*
	Other private	102	3,638.3 *14%, n=82*	6,984.3 *11%, n=188*	5,291.9 *9%, n=233*	15,914.5 *8%, n=402*
	Public	7	234.4 *55%, n=5*	774.6 *28%, n=20*	578.8 *26%, n=21*	1,587.8 *25%, n=36*

(Continued)

Table 12. (Continued)

Forest type group	Owner group	Plots with no DDW	Decay class 1	2	3	All classes
		-- Number --	Million pounds *SE, n*			
White/red/other pine	Forest industry	5	99.2 *44%, n=7*	435.5 *29%, n=14*	443.2 *28%, n=23*	977.9 *21%, n=36*
	Other private	49	1,158.8 *45%, n=24*	1,938.0 *19%, n=64*	419.5 *22%, n=42*	3,516.3 *19%, n=135*
	Public	1	16.5 *100%, n=1*	72.1 *77%, n=2*	21.1 *65%, n=3*	109.7 *75%, n=4*
All	Forest industry	182	8,730.1 *10%, n=209*	23,624.9 *6%, n=575*	19,949.8 *5%, n=722*	52,304.8 *4%, n=1090*
	Other private	332	9,078.7 *10%, n=234*	21,088.8 *7%, n=587*	13,972.4 *6%, n=647*	44,139.9 *5%, n=1272*
	Public	24	822.7 *33%, n=19*	1,764.0 *20%, n=46*	1,568.7 *24%, n=46*	4,155.4 *18%, n=92*
	Total	538	18,631.5 *7%, n=462*	46,477.7 *4%, n=1207*	35,490.9 *3%, n=1415*	100,600.0 *3%, n=2455*

[a] This table is a plot-level (forest type group, owner group) – species-level (decay class) combination; it is listed as a plot-level classification for convenience.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 13. Carbon of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet)					All classes
	0 - 49	50 - 99	100 - 149	150 - 199	200+	
	Million pounds *SE, n*					
Aspen/birch	2,557.8 *17%, n=107*	732.1 *23%, n=52*	1,066.1 *20%, n=73*	947.7 *18%, n=68*	356.8 *26%, n=31*	5,660.6 *10%, n=331*
Elm/ash/red maple	161.6 *61%, n=14*	227.9 *37%, n=16*	190.4 *86%, n=10*	142 *64%, n=4*	12.2 *-%, n=1*	734.2 *31%, n=45*
Northern hardwoods	3,251 *15%, n=127*	4,223.4 *13%, n=180*	6,957.1 *9%, n=343*	4,659.1 *11%, n=225*	1,774.7 *22%, n=61*	20,865.4 *5%, n=936*
Oak/hickory	0.0 *-%, n=0*	441.1 *45%, n=14*	285.3 *52%, n=22*	137.6 *37%, n=17*	137.2 *77%, n=6*	1,001.2 *27%, n=59*
Oak/pine	15.3 *68%, n=3*	0.0 *-%, n=0*	22.9 *77%, n=3*	78.2 *54%, n=10*	37.6 *90%, n=3*	154 *38%, n=19*
Spruce/fir	4,984.8 *11%, n=160*	3,731.1 *13%, n=161*	4,953.7 *10%, n=220*	3,883.2 *11%, n=197*	3,199.1 *12%, n=153*	20,751.9 *5%, n=891*
White/red/other pine	48.4 *78%, n=3*	226.4 *31%, n=21*	566.3 *25%, n=42*	910.7 *34%, n=55*	619.4 *23%, n=54*	2,371.3 *16%, n=175*
Total	11,019.0 *7%, n=414*	9,581.9 *8%, n=444*	14,041.9 *6%, n=712*	10,758.6 *7%, n=575*	6,137.1 *9%, n=309*	51,538.5 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 14. Carbon of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			
	Forest industry	Other private	Public	All owners
	Million pounds *SE, n*			
Aspen/birch	2,678.6 *15%, n=120*	2,832.7 *13%, n=194*	149.3 *40%, n=17*	5,660.6 *10%, n=331*
Elm/ash/red maple	191.1 *56%, n=10*	296.8 *29%, n=32*	246.3 *74%, n=3*	734.2 *31%, n=45*
Northern hardwoods	11,711.7 *7%, n=469*	8,289.8 *8%, n=439*	863.9 *29%, n=28*	20,865.4 *5%, n=936*
Oak/hickory	2.3 *100%, n=2*	992.2 *27%, n=54*	6.8 *100%, n=3*	1,001.2 *27%, n=59*
Oak/pine	0.0 *-%, n=1*	154.0 *38%, n=17*	0.0 *-%, n=1*	154.0 *38%, n=19*
Spruce/fir	11,704.5 *7%, n=453*	8,228.1 *8%, n=402*	819.2 *25%, n=36*	20,751.9 *5%, n=891*
White/red/other pine	501.9 *21%, n=36*	1,812.2 *19%, n=135*	57.2 *75%, n=4*	2,371.3 *16%, n=175*
Total	26,790.1 *4%, n=1090*	22,605.8 *5%, n=1272*	2,142.6 *18%, n=92*	51,538.5 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 15. Volume of down dead wood by species group and large-end diameter class, Maine, 1995

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Million cubic feet *SE, n*					
Balsam fir	341.1 *5%, n=533*	706.7 *5%, n=526*	808.8 *6%, n=314*	41.2 *29%, n=12*	16.0 *71%, n=2*	1,913.7 *4%, n=933*
Black/white spruce	25.3 *18%, n=44*	55.7 *18%, n=46*	54.9 *20%, n=29*	6.2 *71%, n=2*	0.0 *-%, n=0*	142.1 *14%, n=86*
Red spruce	171.5 *8%, n=280*	357.5 *8%, n=294*	436.5 *8%, n=179*	93.5 *22%, n=22*	15.6 *78%, n=2*	1,074.6 *6%, n=537*
White pine	35.7 *17%, n=53*	60.9 *17%, n=46*	118.7 *19%, n=42*	30.3 *47%, n=5*	110.5 *41%, n=7*	356.1 *17%, n=113*
Northern white-cedar	64.9 *10%, n=131*	217.0 *9%, n=188*	587.1 *8%, n=203*	145.3 *18%, n=35*	108.2 *29%, n=13*	1,122.5 *7%, n=377*
Hemlock	14.6 *17%, n=38*	31.6 *19%, n=34*	58.0 *21%, n=28*	9.4 *71%, n=2*	38.1 *45%, n=5*	151.8 *17%, n=86*
Other softwoods	16.2 *19%, n=36*	45.8 *16%, n=47*	70.5 *22%, n=27*	47.1 *46%, n=7*	14.9 *72%, n=2*	194.4 *17%, n=101*
Total softwoods	669.3 *4%, n=907*	1,475.2 *4%, n=950*	2,134.5 *4%, n=684*	373.0 *12%, n=82*	303.2 *21%, n=29*	4,955.2 *3%, n=1472*
Unknown	68.6 *9%, n=156*	123.4 *10%, n=122*	146.7 *14%, n=60*	49.7 *35%, n=9*	7.0 *-%, n=1*	395.3 *9%, n=298*

(Continued)

Table 15. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Million cubic feet *SE, n*					
Red maple	70.5 *9%, n=149*	130.3 *10%, n=131*	140.2 *14%, n=62*	24.7 *43%, n=6*	16.8 *58%, n=3*	382.3 *9%, n=284*
Sugar maple	18.2 *17%, n=42*	52.6 *20%, n=48*	97.8 *18%, n=39*	56.1 *31%, n=11*	19.6 *60%, n=3*	244.2 *14%, n=109*
Yellow birch	21.8 *16%, n=55*	46.2 *15%, n=54*	124.7 *15%, n=51*	48.7 *36%, n=9*	7.1 *-%, n=1*	248.5 *12%, n=143*
Paper birch	81.0 *9%, n=175*	118.2 *10%, n=119*	102.2 *15%, n=55*	27.1 *42%, n=6*	7.3 *-%, n=1*	335.8 *8%, n=291*
Beech	39.0 *12%, n=87*	71.9 *14%, n=67*	135.0 *15%, n=56*	27.3 *42%, n=6*	0.0 -%, n=0	273.3 *11%, n=158*
Aspen	34.9 *16%, n=64*	72.6 *14%, n=67*	80.4 *16%, n=43*	14.4 *50%, n=4*	0.0 -%, n=0	202.2 *11%, n=134*
Other hardwoods	28.7 *36%, n=51*	60.3 *25%, n=47*	77.7 *21%, n=33*	28.2 *42%, n=6*	0.0 -%, n=0	194.9 *17%, n=115*
Total hardwoods	294.1 *6%, n=538*	552.0 *5%, n=472*	757.9 *6%, n=309*	226.5 *16%, n=47*	50.8 *36%, n=8*	1,881.2 *4%, n=962*
Total	1,032.0 *3%, n=1325*	2,150.6 *3%, n=1307*	3,039.1 *3%, n=929*	649.2 *9%, n=135*	360.9 *19%, n=38*	7,231.7 *3%, n=194*

Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 16. Volume of down dead wood by species type and decay class, Maine, 1995

Species type	Decay class 1	2	3	All classes
	Million cubic feet *SE, n*			
Hardwoods	258.0 *11%, n=202*	766.6 *7%, n=524*	856.7 *6%, n=514*	1,881.2 *4%, n=962*
Softwoods	567.3 *9%, n=314*	1,868.7 *5%, n=878*	2,519.2 *4%, n=1057*	4,955.2 *3%, n=1472*
Unknown	15.7 *25%, n=21*	77.1 *15%, n=96*	302.6 *11%, n=209*	395.3 *9%, n=298*
Total	840.9 *7%, n=472*	2,712.4 *4%, n=1226*	3,678.4 *3%, n=1435*	7,231.7 *3%, n=1948*

Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 17. Number of pieces of down dead wood by species group and large-end diameter class, Maine, 1995

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Million pieces *SE, n*					
Balsam fir	497.9 *6%, n=533*	273.6 *5%, n=526*	103.4 *7%, n=314*	1.3 *30%, n=12*	0.3 *75%, n=2*	876.6 *4%, n=933*
Black/white spruce	42.1 *19%, n=44*	21.8 *19%, n=46*	8.8 *29%, n=29*	0.2 *72%, n=2*	0.0 *-%, n=0*	72.9 *15%, n=86*
Red spruce	239.9 *9%, n=280*	143.3 *8%, n=294*	52.4 *10%, n=179*	3.8 *24%, n=22*	0.2 *71%, n=2*	439.6 *7%, n=537*
White pine	77.9 *17%, n=53*	28.2 *20%, n=46*	16.4 *19%, n=42*	1.3 *55%, n=5*	3.2 *45%, n=7*	127.0 *14%, n=113*
Northern white-cedar	112.7 *11%, n=131*	99.2 *9%, n=188*	81.1 *9%, n=203*	6.9 *19%, n=35*	2.6 *31%, n=13*	302.6 *7%, n=377*
Hemlock	33.7 *19%, n=38*	17.3 *22%, n=34*	7.6 *22%, n=28*	0.3 *72%, n=2*	1.6 *54%, n=5*	60.4 *14%, n=86*
Other softwoods	33.9 *19%, n=36*	23.1 *17%, n=47*	10.8 *26%, n=27*	1.9 *44%, n=7*	0.6 *78%, n=2*	70.3 *13%, n=101*
Total softwoods	1,038.0 *4%, n=907*	606.5 *4%, n=950*	280.6 *5%, n=684*	15.6 *13%, n=82*	8.5 *24%, n=29*	1,949.3 *3%, n=1472*
Unknown	112.2 *9%, n=156*	59.4 *12%, n=122*	24.1 *16%, n=60*	2.5 *38%, n=9*	0.1 *-%, n=1*	198.2 *8%, n=298*

(Continued)

Table 17. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Million pieces *SE, n*					
Red maple	102.8 *10%, n=149*	52.8 *10%, n=131*	23.2 *21%, n=62*	1.4 *45%, n=6*	0.5 *62%, n=3*	180.6 *8%, n=284*
Sugar maple	32.0 *18%, n=42*	31.1 *23%, n=48*	15.4 *18%, n=39*	2.7 *33%, n=11*	0.4 *59%, n=3*	81.7 *14%, n=109*
Yellow birch	39.8 *16%, n=55*	28.3 *17%, n=54*	17.1 *16%, n=51*	2.4 *36%, n=9*	0.3 *-%, n=1*	87.9 *11%, n=143*
Paper birch	146.7 *9%, n=175*	52.7 *11%, n=119*	18.1 *17%, n=55*	2.3 *53%, n=6*	0.2 *-%, n=1*	220.0 *8%, n=291*
Beech	67.4 *13%, n=87*	32.6 *16%, n=67*	23.9 *17%, n=56*	1.1 *43%, n=6*	0.0 *-%, n=0*	125.0 *11%, n=158*
Aspen	52.8 *16%, n=64*	30.9 *15%, n=67*	11.4 *19%, n=43*	0.5 *51%, n=4*	0.0 *-%, n=0*	95.7 *12%, n=134*
Other hardwoods	46.8 *22%, n=51*	42.4 *51%, n=47*	13.6 *24%, n=33*	1.3 *47%, n=6*	0.0 *-%, n=0*	104.1 *29%, n=115*
Total hardwoods	488.4 *5%, n=538*	270.9 *9%, n=472*	122.7 *7%, n=309*	11.7 *17%, n=47*	1.3 *37%, n=8*	895.0 *5%, n=962*
Total	1,638.6 *3%, n=1325*	936.8 *4%, n=1307*	427.4 *4%, n=929*	29.8 *10%, n=135*	10.0 *21%, n=38*	3,042.5 *2%, n=1948*

Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 18. Number of pieces of down dead wood by species type and decay class, Maine, 1995

Species type	Decay class 1	2	3	All classes
	Million pieces *SE, n*			
Hardwoods	118.7 *10%, n=202*	396.1 *9%, n=524*	380.2 *6%, n=514*	895.0 *5%, n=962*
Softwoods	191.9 *11%, n=314*	748.2 *4%, n=878*	1,009.2 *4%, n=1057*	1,949.3 *3%, n=1472*
Unknown	11.6 *25%, n=21*	53.3 *13%, n=96*	133.4 *9%, n=209*	198.2 *8%, n=298*
Total	322.1 *8%, n=472*	1,197.6 *4%, n=1226*	1,522.8 *3%, n=1435*	3,042.5 *2%, n=1948*

Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 19. Biomass (dry weight) of down dead wood by species group and large-end diameter class, Maine, 1995

Species group	Diameter class (inches)					All classes
	3 - 4	5 - 8	9 - 14	15 - 19	20+	
	Million pounds *SE, n*					
Balsam fir	4,373.9 *6%, n=533*	8,385.6 *5%, n=526*	10,281.2 *7%, n=314*	560.0 *31%, n=12*	189.2 *71%, n=2*	23,789.9 *4%, n=933*
Black/white spruce	348.1 *19%, n=44*	798.9 *18%, n=46*	687.7 *20%, n=29*	76.8 *75%, n=2*	0.0 *-%, n=0*	1,911.6 *15%, n=86*
Red spruce	2,520.4 *8%, n=280*	5,094.7 *8%, n=294*	6,042.5 *9%, n=179*	1,401.0 *23%, n=22*	198.9 *82%, n=2*	15,257.4 *6%, n=537*
White pine	515.2 *17%, n=53*	845.5 *19%, n=46*	1,418.5 *18%, n=42*	525.4 *46%, n=5*	1,935.7 *42%, n=7*	5,240.3 *19%, n=113*
Northern white-cedar	749.1 *10%, n=131*	2,529.4 *9%, n=188*	7,131.8 *8%, n=203*	1,716.3 *19%, n=35*	1,235.6 *31%, n=13*	13,362.1 *7%, n=377*
Hemlock	214.4 *17%, n=38*	464.8 *20%, n=34*	884.6 *22%, n=28*	142.9 *71%, n=2*	563.3 *49%, n=5*	2,270.1 *18%, n=86*
Other softwoods	206.4 *19%, n=36*	499.3 *16%, n=47*	936.2 *23%, n=27*	508.2 *45%, n=7*	132.1 *71%, n=2*	2,282.3 *16%, n=101*
Total softwoods	8,927.6 *4%, n=907*	18,618.2 *4%, n=950*	27,382.4 *4%, n=684*	4,930.6 *12%, n=82*	4,254.8 *24%, n=29*	64,113.6 *3%, n=1472*
Unknown	1,017.8 *10%, n=156*	1,707.1 *11%, n=122*	1,632.2 *15%, n=60*	470.2 *36%, n=9*	70.0 *-%, n=1*	4,897.3 *9%, n=298*

(Continued)

Table 19. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Million pounds *SE, n*					
Red maple	1,186.2 *9%, n=149*	2,237.3 *10%, n=131*	1,995.7 *14%, n=62*	497.6 *46%, n=6*	263.5 *62%, n=3*	6,180.3 *9%, n=284*
Sugar maple	345.0 *17%, n=42*	1,135.2 *25%, n=48*	1,650.3 *18%, n=39*	1,112.4 *33%, n=11*	400.4 *58%, n=3*	4,643.3 *16%, n=109*
Yellow birch	396.7 *18%, n=55*	847.8 *16%, n=54*	1,883.1 *16%, n=51*	633.6 *36%, n=9*	60.4 *-%, n=1*	3,821.6 *11%, n=143*
Paper birch	1,285.0 *9%, n=175*	1,897.1 *11%, n=119*	1,447.7 *15%, n=55*	503.5 *43%, n=6*	62.2 *-%, n=1*	5,195.5 *9%, n=291*
Beech	813.9 *13%, n=87*	1,505.6 *15%, n=67*	2,557.3 *15%, n=56*	585.3 *43%, n=6*	0.0 *-%, n=0*	5,462.1 *11%, n=158*
Aspen	539.3 *17%, n=64*	951.2 *14%, n=67*	1,200.6 *17%, n=43*	194.0 *52%, n=4*	0.0 *-%, n=0*	2,885.1 *11%, n=134*
Other hardwoods	537.2 *40%, n=51*	1,063.2 *29%, n=47*	1,330.4 *23%, n=33*	470.5 *44%, n=6*	0.0 *-%, n=0*	3,401.2 *19%, n=115*
Total hardwoods	5,103.3 *6%, n=538*	9,637.4 *6%, n=472*	12,065.1 *7%, n=309*	3,996.9 *17%, n=47*	786.4 *38%, n=8*	31,589.1 *5%, n=962*
Total	15,048.7 *3%, n=1325*	29,962.8 *3%, n=1307*	41,079.7 *4%, n=929*	9,397.7 *10%, n=135*	5,111.2 *21%, n=38*	100,600.0 *3%, n=1948*

Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 20. Biomass (dry weight) of down dead wood by species type and decay class, Maine, 1995

Species type	Decay class 1	2	3	All classes
	Million pounds *SE, n*			
Hardwoods	6,727.1 *11%, n=202*	15,267.9 *7%, n=524*	9,594.1 *6%, n=514*	31,589.1 *5%, n=962*
Softwoods	11,503.7 *9%, n=314*	29,773.6 *5%, n=878*	22,836.2 *4%, n=1057*	64,113.6 *3%, n=1472*
Unknown	400.7 *26%, n=21*	1,436.1 *14%, n=96*	3,060.5 *11%, n=209*	4,897.3 *9%, n=298*
Total	18,631.5 *7%, n=472*	46,477.7 *4%, n=1226*	35,490.9 *3%, n=1435*	100,600.0 *3%, n=1948*

Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 21. Biomass (dry weight) of down dead wood by large-end diameter class, owner group, and decay class, Maine, 1995[a]

Diameter class (inches)	Owner group	Plots with no DDW	Decay class 1	2	3	All classes
		-- Number --	Million pounds *SE, n*			
3-4	Forest industry	--	1,043.2 *12%, n=97*	4,274.5 *8%, n=350*	2,234.5 *6%, n=379*	7,552.2 *6%, n=619*
	Other private	--	1,399.5 *13%, n=105*	3,534.5 *6%, n=361*	2,079.2 *6%, n=370*	7,013.2 *5%, n=646*
	Public	--	126.7 *43%, n=9*	268.8 *28%, n=23*	87.7 *25%, n=20*	483.2 *22%, n=39*
5-8	Forest industry	--	2,594.8 *14%, n=96*	6,939.9 *8%, n=303*	5,745.6 *5%, n=432*	15,280.3 *5%, n=629*
	Other private	--	2,777.2 *11%, n=119*	6,407.0 *6%, n=327*	4,254.0 *6%, n=329*	13,438.2 *5%, n=605*
	Public	--	185.8 *40%, n=7*	575.0 *26%, n=27*	483.5 *20%, n=35*	1,244.3 *17%, n=53*
9-14	Forest industry	--	3,519.4 *13%, n=76*	9,061.6 *8%, n=221*	8,918.6 *6%, n=328*	21,499.6 *5%, n=496*
	Other private	--	3,538.6 *14%, n=71*	7,886.3 *9%, n=177*	6,170.3 *8%, n=233*	17,595.3 *6%, n=389*
	Public	--	404.8 *38%, n=9*	884.0 *23%, n=22*	696.1 *27%, n=24*	1,984.9 *20%, n=35*

(Continued)

Table 21. (Continued)

Diameter class (inches)	Owner group	Plots with no DDW	Decay class 1	Decay class 2	Decay class 3	All classes
		-- Number --	Million pounds *SE, n*			
15-19	Forest industry	--	1,051.5 *30%, n=12*	2,404.3 *20%, n=30*	2,083.4 *16%, n=44*	5,539.2 *12%, n=85*
	Other private	--	660.7 *36%, n=8*	1,920.9 *27%, n=18*	1,135.4 *24%, n=23*	3,717.0 *17%, n=48*
	Public	--	105.4 *100%, n=1*	36.2 *100%, n=1*	0.0 *-%, n=0*	141.6 *100%, n=1*
20+	Forest industry	--	521.1 *62%, n=3*	944.7 *46%, n=4*	967.7 *28%, n=14*	2,433.5 *26%, n=20*
	Other private	--	702.7 *75%, n=2*	1,340.2 *46%, n=6*	333.4 *46%, n=5*	2,376.3 *35%, n=13*
	Public	--	0.0 *-%, n=0*	0.0 *-%, n=0*	301.4 *63%, n=3*	301.4 *63%, n=3*

(Continued)

Table 21. (Continued)

Diameter class (inches)	Owner group	Plots with no DDW	Decay class 1	2	3	All classes
		-- Number --	Million pounds *SE, n*			
All	Forest industry	182	8,730.1 *10%, n=209*	23,624.9 *6%, n=575*	19,949.8 *5%, n=722*	52,304.8 *4%, n=1090*
	Other private	332	9,078.7 *10%, n=234*	21,088.8 *7%, n=587*	13,972.4 *6%, n=647*	44,139.9 *5%, n=1272*
	Public	24	822.7 *33%, n=19*	1,764.0 *20%, n=46*	1,568.7 *24%, n=46*	4,155.4 *18%, n=92*
	Total	538	18,631.5 *7%, n=462*	46,477.7 *4%, n=1207*	35,490.9 *3%, n=1415*	100,600.0 *3%, n=2455*

[a]This table is a plot-level (owner group) –species-level (diameter class, decay class) combination; it is listed as a species -level classification for convenience.
Note: SE = sampling error; n = number of plots sampled for DDW; -- = not applicable; -% = SE does not exist.

Table 22. Carbon of down dead wood by species group and large-end diameter class, Maine, 1995

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Million pounds *SE, n*					
Balsam fir	2,278.8 *6%, n=533*	4,368.9 *5%, n=526*	5,356.5 *7%, n=314*	291.8 *31%, n=12*	98.6 *71%, n=2*	12,394.5 *4%, n=933*
Black/white spruce	181.4 *19%, n=44*	416.2 *18%, n=46*	358.3 *20%, n=29*	40.0 *75%, n=2*	0.0 *-%, n=0*	995.9 *15%, n=86*
Red spruce	1,313.1 *8%, n=280*	2,654.3 *8%, n=294*	3,148.1 *9%, n=179*	729.9 *23%, n=22*	103.6 *82%, n=2*	7,949.1 *6%, n=537*
White pine	268.4 *17%, n=53*	440.5 *19%, n=46*	739.0 *18%, n=42*	273.7 *46%, n=5*	1,008.5 *42%, n=7*	2,730.2 *19%, n=113*
Northern white-cedar	390.3 *10%, n=131*	1,317.8 *9%, n=188*	3,715.7 *8%, n=203*	894.2 *19%, n=35*	643.8 *31%, n=13*	6,961.7 *7%, n=377*
Hemlock	111.7 *17%, n=38*	242.2 *20%, n=34*	460.9 *22%, n=28*	74.5 *71%, n=2*	293.5 *49%, n=5*	1,182.7 *18%, n=86*
Other softwoods	104.6 *19%, n=36*	251.5 *16%, n=47*	474.0 *24%, n=27*	258.2 *45%, n=7*	65.8 *71%, n=2*	1,154.1 *17%, n=101*
Total softwoods	4,648.4 *4%, n=907*	9,691.4 *4%, n=950*	14,252.5 *4%, n=684*	2,562.3 *12%, n=82*	2,213.7 *24%, n=29*	33,368.3 *3%, n=1472*
Unknown	506.8 *10%, n=156*	850.2 *11%, n=122*	812.8 *15%, n=60*	234.2 *36%, n=9*	34.9 *-%, n=1*	2,438.8 *9%, n=298*

(Continued)

Table 22. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Million pounds *SE, n*					
Red maple	590.7 *9%, n=149*	1,114.2 *10%, n=131*	993.9 *14%, n=62*	247.8 *46%, n=6*	131.2 *62%, n=3*	3,077.8 *9%, n=284*
Sugar maple	171.8 *17%, n=42*	565.3 *25%, n=48*	821.8 *18%, n=39*	554.0 *33%, n=11*	199.4 *58%, n=3*	2,312.3 *16%, n=109*
Yellow birch	197.6 *18%, n=55*	422.2 *16%, n=54*	937.8 *16%, n=51*	315.6 *36%, n=9*	30.1 *-%, n=1*	1,903.2 *11%, n=143*
Paper birch	639.9 *9%, n=175*	944.8 *11%, n=119*	721.0 *15%, n=55*	250.7 *43%, n=6*	31.0 *-%, n=1*	2,587.4 *9%, n=291*
Beech	405.3 *13%, n=87*	749.8 *15%, n=67*	1,273.6 *15%, n=56*	291.5 *43%, n=6*	0.0 *-%, n=0*	2,720.1 *11%, n=158*
Aspen	268.6 *17%, n=64*	473.7 *14%, n=67*	597.9 *17%, n=43*	96.6 *52%, n=4*	0.0 *-%, n=0*	1,436.8 *11%, n=134*
Other hardwoods	267.5 *40%, n=51*	529.5 *29%, n=47*	662.5 *23%, n=33*	234.3 *44%, n=6*	0.0 *-%, n=0*	1,693.8 *19%, n=115*
Total hardwoods	2,541.5 *6%, n=538*	4,799.4 *6%, n=472*	6,008.4 *7%, n=309*	1,990.5 *17%, n=47*	391.6 *38%, n=8*	15,731.4 *5%, n=962*
Total	7,696.7 *3%, n=1325*	15,341.0 *3%, n=1307*	21,073.7 *4%, n=929*	4,786.9 *10%, n=135*	2,640.2 *21%, n=38*	51,538.5 *3%, n=1948*

Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 23. Carbon of down dead wood by species type and decay class, Maine, 1995

Species type	Decay class 1	2	3	All classes
	Million pounds *SE, n*			
Hardwoods	3,350.1 *11%, n=202*	7,603.4 *7%, n=524*	4,777.9 *6%, n=514*	1,5731.4 *5%, n=962*
Softwoods	5,993.4 *9%, n=314*	1,5504.7 *5%, n=878*	1,1870.1 *4%, n=1057*	3,3368.3 *3%, n=1472*
Unknown	199.5 *26%, n=21*	715.2 *14%, n=96*	1,524.1 *11%, n=209*	2,438.8 *9%, n=298*
Total	9,543.1 *7%, n=472*	2,3823.3 *4%, n=1226*	1,8172.1 *3%, n=1435*	51,538.5 *3%, n=1948*

Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 24. Down dead wood pile statistics by county, Maine, 1995

County	Attribute				
	Volume	Biomass	Carbon	Number of piles	Area
	- Million cubic feet -	- Million lb -	- Million lb - *SE, n*	- Thousands -	- Thousand acres -
Androscoggin	0.0 *0%, n=16*	0.0 *0%, n=16*	0.0 *0%, n=16*	0.0 *0%, n=16*	184.5 *9%, n=16*
Aroostook	555.6 *58%, n=568*	11,738.5 *60%, n=568*	5,869.3 *60%, n=568*	0.4 *39%, n=5681*	3,744.0 *%, n=568*
Cumberland	2.2 *100%, n=49*	32.0 *100%, n=49*	16.0 *100%, n=49*	0.0 *100%, n=49*	364.7 *4%, n=49*
Franklin	27.7 *63%, n=150*	614.4 *67%, n=150*	307.2 *67%, n=150*	0.1 *54%, n=150*	969.7 *3%, n=150*
Hancock	6.6 *74%, n=130*	101.2 *75%, n=130*	50.6 *75%, n=130*	0.1 *72%, n=130*	849.8 *3%, n=130*
Kennebec	4.0 *72%, n=51*	64.5 *71%, n=51*	32.3 *71%, n=51*	0.1 *72%, n=51*	404.7 *3%, n=51*
Knox	2.1 *100%, n=23*	31.2 *100%, n=23*	15.6 *100%, n=23*	0.0 *100%, n=23*	166.9 *7%, n=23*
Lincoln	5.9 *100%, n=34*	125.5 *100%, n=34*	62.8 *100%, n=34*	0.0 *100%, n=34*	222.4 *5%, n=34*
Oxford	133.4 *97%, n=177*	3,229.6 *97%, n=177*	1,614.8 *97%, n=177*	0.1 *71%, n=177*	1,205.4 *2%, n=177*

(Continued)

Table 24. (Continued)

County	Attribute				
	Volume	Biomass	Carbon	Number of piles	Area
	- Million cubic feet -	- Million lb -	- Million lb - *SE, n*	- Thousands -	- Thousand acres -
Penobscot	100.5 *75%, n=272*	1,844.6 *71%, n=272*	922.3 *71%, n=272*	0.1 *58%, n=272*	1,838.3 *1%, n=272*
Piscataquis	199.7 *53%, n=333*	3,841.5 *57%, n=333*	1,920.8 *57%, n=333*	0.2 *33%, n=333*	2,209.8 *1%, n=333*
Sagadahoc	0.0 *0%, n=18*	0.0 *0%, n=18*	0.0 *0%, n=18*	0.0 *0%, n=18*	123.4 *7%, n=18*
Somerset	243.8 *75%, n=326*	5,264.5 *74%, n=326*	2,632.2 *74%, n=326*	0.2 *44%, n=326*	2,343.9 *1%, n=326*
Waldo	10.3 *81%, n=55*	241.7 *83%, n=55*	120.9 *83%, n=55*	0.1 *49%, n=55*	372.9 *3%, n=55*
Washington	359.3 *61%, n=207*	7,631.6 *63%, n=207*	3,815.8 *63%, n=207*	0.2 *62%, n=207*	1,383.3 *2%, n=207*
York	0.0 *0%, n=47*	0.0 *0%, n=47*	0.0 *0%, n=47*	0.0 *0%, n=47*	472.0 *6%, n=47*
Total	1,650.9 *28%, n=2455*	34,760.8 *29%, n=2455*	17,380.4 *29%, n=2455*	1.6 *16%, n=2455*	16,855.8 *0.5%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 25. Down dead wood pile statistics by forest type group, Maine, 1995

Forest type group	Attribute				
	Volume	Biomass	Carbon	Number of piles	Area
	- Million cubic feet -	- Million lb -	- Million lb - *SE, n*	- Thousands -	- Thousand acres -
Aspen/birch	326.8 *52%, n=331*	6,064.6 *56%, n=331*	3,032.3 *56%, n=331*	0.3 *39%, n=331*	2,252.3 *5%, n=331*
Elm/ash/red maple	0.0 *0%, n=45*	0.0 *0%, n=45*	0.0 *0%, n=45*	0.0 *0%, n=45*	320.6 *15%, n=45*
Northern hardwoods	1,140.1 *38%, n=936*	25,875.6 *37%, n=936*	12,937.8 *37%, n=936*	0.8 *25%, n=936*	6,433.4 *2%, n=936*
Oak/hickory	0.0 *0%, n=59*	0.0 *0%, n=59*	0.0 *0%, n=59*	0.0 *0%, n=59*	450.3 *13%, n=59*
Oak/pine	0.0 *0%, n=19*	0.0 *0%, n=19*	0.0 *0%, n=19*	0.0 *0%, n=19*	134.4 *22%, n=19*
Spruce/fir	163.7 *42%, n=891*	2,491.4 *41%, n=891*	1,245.7 *41%, n=891*	0.4 *30%, n=891*	5,986.2 *2%, n=891*
White/red/other pine	20.3 *72%, n=175*	329.2 *74%, n=175*	164.6 *74%, n=175*	0.1 *51%, n=175*	1,278.6 *7%, n=175*
Total	1,650.9 *28%, n=2455*	34,760.8 *29%, n=2455*	17,380.4 *29%, n=2455*	1.6 *16%, n=2455*	16,855.8 *0.5%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 26. Down dead wood pile statistics by owner group, Maine, 1995

Owner group	Attribute				
	Volume	Biomass	Carbon	Number of piles	Area
	- Million cubic feet -	- Million lb -	- Million lb - *SE, n*	- Thousands -	- Thousand acres -
Forest industry	451.6 *41%, n=1090*	9,515.2 *43%, n=1090*	4,757.6 *43%, n=1090*	0.5 *27%, n=1090*	7,328.2 *2%, n=1090*
Other private	1,174.2 *37%, n=1272*	24,635.2 *38%, n=1272*	12,317.6 *38%, n=1272*	1.1 *21%, n=1272*	8,901.7 *2%, n=1272*
Public	25.1 *100%, n=92*	610.4 *100%, n=92*	305.2 *100%, n=92*	0.0 *100%, n=92*	625.9 *10%, n=92*
Total	1,650.9 *28%, n=2455*	34,760.8 *29%, n=2455*	17,380.4 *29%, n=2455*	1.6 *16%, n=2455*	16,855.8 *0.5%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 27. Estimated timberland area by forest type group and basal area class using only the field plots sampled for down dead wood, Maine, 1995[a]

Forest type group	Basal area class (square feet)					All classes
	0 - 49	50 - 99	100 - 149	150 - 199	200+	
	Thousand acres *SE, n*					
Aspen/birch	712.2 *9%, n=107*	370.5 *14%, n=52*	501.2 *12%, n=73*	460.4 *12%, n=68*	208.0 *18%, n=31*	2,252.3 *5%, n=331*
Elm/ash/red maple	95.0 *26%, n=14*	117.1 *25%, n=16*	73.2 *32%, n=10*	29.0 *50%, n=4*	6.2 *-%, n=1*	320.6 *15%, n=45*
Northern hardwoods	868.1 *8%, n=127*	1,247.7 *7%, n=180*	2,343.9 *5%, n=343*	1,550.4 *6%, n=225*	423.3 *13%, n=61*	6,433.4 *2%, n=936*
Oak/hickory	2.4 *-%, n=0*	107.5 *27%, n=14*	165.9 *22%, n=22*	130.9 *25%, n=17*	43.6 *41%, n=6*	450.3 *13%, n=59*
Oak/pine	19.4 *54%, n=3*	0.0 *-%, n=0*	22.1 *58%, n=3*	69.8 *32%, n=10*	23.2 *59%, n=3*	134.4 *22%, n=19*
Spruce/fir	1,072.2 *7%, n=160*	1,088.9 *7%, n=161*	1,475.7 *6%, n=220*	1,321.4 *7%, n=197*	1,028.1 *8%, n=153*	5,986.2 *2%, n=891*
White/red/other pine	21.7 *49%, n=3*	143.5 *22%, n=21*	291.4 *15%, n=42*	414.7 *13%, n=55*	407.3 *14%, n=54*	1,278.6 *7%, n=175*
Total	2,791.0 *4%, n=414*	3,075.2 *4%, n=444*	4,873.3 *3%, n=712*	3,976.6 *4%, n=575*	2,139.7 *5%, n=309*	16,855.8 *0.5%, n=2455*

[a]Because some field plots were not measured for DDW, these area estimates differ from area estimates in the fourth Maine inventory (Griffith and Alerich 1996) due to the estimation procedures in double sampling. However, the difference is slight (0.48 percent).

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 28. Estimated timberland area by forest type group and owner group using only the field plots sampled for down dead wood, Maine, 1995[a]

Forest type group	Owner group			All owners
	Forest industry	Other private	Public	
	Thousand acres *SE, n*			
Aspen/birch	789.4 *9%, n=120*	1,348.6 *7%, n=194*	114.3 *23%, n=17*	2,252.3 *5%, n=331*
Elm/ash/red maple	68.1 *32%, n=10*	232.8 *18%, n=32*	19.7 *58%, n=3*	320.6 *15%, n=45*
Northern hardwoods	3,156.6 *4%, n=469*	3,085.1 *4%, n=439*	191.7 *19%, n=28*	6,433.4 *2%, n=936*
Oak/hickory	12.4 *71%, n=2*	416.7 *13%, n=54*	21.1 *58%, n=3*	450.3 *13%, n=59*
Oak/pine	6.5 *-%, n=1*	120.1 *24%, n=17*	7.9 *-%, n=1*	134.4 *22%, n=19*
Spruce/fir	3,049.7 *4%, n=453*	2,692.5 *4%, n=402*	244.0 *16%, n=36*	5,986.2 *2%, n=891*
White/red/other pine	245.5 *16%, n=36*	1,005.8 *8%, n=135*	27.2 *50%, n=4*	1,278.6 *7%, n=175*
Total	7,328.2 *2%, n=1090*	8,901.7 *2%, n=1272*	625.9 *10%, n=92*	16,855.8 *0.5%, n=2455*

[a]Because some field plots were not measured for DDW, these area estimates differ from area estimates in the fourth Maine inventory (Griffith and Alerich 1996) due to the estimation procedures in double sampling. However, the difference is slight (0.48 percent).

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 29. Estimated timberland area by county and owner group using only the field plots sampled for down dead wood, Maine, 1995[a]

County	Owner group			
	Forest industry	Other private	Public	All owners
	Thousand acres			
	SE, n			
Androscoggin	0.0 *-%, n=0*	184.5 *9%, n=16*	0.0 *-%, n=0*	184.5 *9%, n=16*
Aroostook	2,304.6 *3%, n=351*	1,292.0 *6%, n=195*	147.4 *21%, n=22*	3,744.0 *1%, n=568*
Cumberland	8.9 *-%, n=1*	340.5 *6%, n=46*	15.3 *71%, n=2*	364.7 *4%, n=49*
Franklin	461.5 *9%, n=71*	501.2 *8%, n=78*	7.1 *-%, n=1*	969.7 *2%, n=150*
Hancock	233.6 *15%, n=36*	596.4 *7%, n=91*	19.8 *58%, n=3*	849.8 *3%, n=130*
Kennebec	7.8 *-%, n=1*	389.2 *4%, n=49*	7.8 *-%, n=1*	404.7 *3%, n=51*
Knox	0.0 *-%, n=0*	166.9 *7%, n=23*	0.0 *-%, n=0*	166.9 *7%, n=23*
Lincoln	0.0 *-%, n=0*	216.0 *6%, n=33*	6.4 *-%, n=1*	222.4 *5%, n=34*
Oxford	305.6 *13%, n=45*	799.4 *6%, n=117*	100.4 *24%, n=15*	1,205.4 *2%, n=177*

(Continued)

Table 29. (Continued)

County	Owner group			
	Forest industry	Other private	Public	All owners
	Thousand acres *SE, n*			
Penobscot	624.5 *9%, n=93*	1,185.0 *5%, n=175*	28.8 *45%, n=4*	1,838.3 *1%, n=272*
Piscataquis	1,222.1 *5%, n=185*	829.1 *7%, n=124*	158.6 *20%, n=24*	2,209.8 *1%, n=333*
Sagadahoc	0.0 *-%, n=0*	123.4 *7%, n=18*	0.0 *-%, n=0*	123.4 *7%, n=18*
Somerset	1,495.8 *4%, n=209*	773.6 *8%, n=107*	74.5 *32%, n=10*	2,343.9 *1%, n=326*
Waldo	0.0 *-%, n=0*	359.5 *4%, n=53*	13.4 *71%, n=2*	372.9 *3%, n=55*
Washington	663.7 *7%, n=99*	672.9 *7%, n=101*	46.6 *36%, n=7*	1,383.3 *2%, n=207*
York	0.0 *-%, n=0*	472.0 *5%, n=47*	0.0 *-%, n=0*	472.0 *5%, n=47*
Total	7,328.2 *2%, n=1090*	8,901.7 *2%, n=1272*	625.9 *10%, n=92*	16,855.8 *0.5%, n=2455*

[a]Because some field plots were not measured for DDW, these area estimates differ from area estimates in the fourth Maine inventory (Griffith and Alerich 1996) due to the estimation procedures in double sampling. However, the difference is slight (0.48 percent).

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 30. Estimated timberland area associated with pieces of down dead wood by species group and large-end diameter class, Maine, 1995[a]

Species group	Diameter class (inches)					All classes
	3 - 4	5 - 8	9 - 14	15 - 19	20+	
	Thousand acres *SE, n*					
Balsam fir	995.4 *6%, n=146*	1,331.5 *5%, n=198*	998.3 *6%, n=147*	40.9 *31%, n=6*	6.0 *-%, n=1*	3,372.2 *3%, n=498*
Black/white spruce	92.3 *22%, n=14*	139.0 *18%, n=21*	90.5 *22%, n=13*	6.8 *-%, n=1*	0.0 *-%, n=0*	328.6 *13%, n=49*
Red spruce	408.9 *9%, n=61*	680.1 *7%, n=101*	508.4 *8%, n=76*	68.6 *23%, n=10*	11.4 *71%, n=2*	1,677.4 *5%, n=250*
White pine	213.5 *18%, n=27*	154.0 *19%, n=21*	150.5 *18%, n=20*	33.4 *47%, n=4*	36.3 *39%, n=5*	587.6 *10%, n=76*
Northern white-cedar	211.0 *13%, n=32*	423.0 *9%, n=63*	660.0 *7%, n=99*	90.5 *18%, n=14*	43.9 *28%, n=6*	1,428.4 *5%, n=213*
Hemlock	83.9 *24%, n=12*	111.8 *20%, n=16*	116.3 *23%, n=15*	6.3 *-%, n=1*	17.0 *50%, n=3*	335.4 *13%, n=46*
Other softwoods	51.1 *29%, n=7*	99.9 *19%, n=14*	80.0 *23%, n=11*	24.3 *42%, n=3*	3.2 *-%, n=0*	258.6 *13%, n=37*
Total softwoods	2,056.0 *4%, n=299*	2,939.3 *3%, n=433*	2,604.1 *4%, n=381*	270.9 *12%, n=39*	117.9 *20%, n=17*	7,988.2 *2%, n=1169*
Unknown	378.1 *11%, n=54*	345.0 *11%, n=50*	216.8 *15%, n=31*	37.7 *37%, n=6*	5.5 *-%, n=1*	983.0 *7%, n=142*

(Continued)

Table 30. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Thousand acres *SE, n*					
Red maple	349.9 *12%, n=48*	365.2 *11%, n=51*	195.2 *15%, n=27*	23.3 *44%, n=3*	13.6 *63%, n=2*	947.1 *7%, n=133*
Sugar maple	83.8 *22%, n=13*	119.3 *18%, n=18*	117.0 *18%, n=17*	49.8 *31%, n=7*	10.5 *61%, n=2*	380.4 *11%, n=57*
Yellow birch	93.3 *21%, n=14*	116.8 *17%, n=17*	157.9 *16%, n=24*	36.5 *36%, n=5*	1.3 *-%, n=0*	405.9 *10%, n=61*
Paper birch	411.5 *10%, n=59*	302.3 *12%, n=44*	153.8 *16%, n=23*	18.2 *42%, n=3*	6.0 *-%, n=1*	891.9 *7%, n=130*
Beech	223.4 *15%, n=33*	188.9 *15%, n=28*	229.6 *15%, n=34*	27.8 *44%, n=4*	0.0 *-%, n=0*	669.7 *9%, n=100*
Aspen	155.1 *16%, n=23*	184.4 *16%, n=27*	137.9 *17%, n=20*	21.2 *51%, n=3*	0.0 *-%, n=0*	498.6 *10%, n=72*
Other hardwoods	97.5 *20%, n=14*	153.3 *18%, n=21*	110.6 *19%, n=16*	18.8 *45%, n=3*	0.0 *-%, n=0*	380.1 *11%, n=54*
Total hardwoods	1,414.5 *6%, n=204*	1,430.2 *5%, n=207*	1,102.0 *6%, n=161*	195.7 *15%, n=29*	31.3 *39%, n=5*	4,173.7 *3%, n=606*
Plots with no DDW	--	--	--	--	--	3,710.9 *4%, n=538*
Total	3,848.6 *3%, n=557*	4,714.5 *3%, n=690*	3,922.8 *3%, n=574*	504.3 *9%, n=73*	154.7 *17%, n=23*	16,855.8 *0.5%, n=2455*

[a]To estimate area associated with a piece, the plot area is partitioned by species group in proportion to biomass within the large-end diameter class.
Note: SE = sampling error; n = number of plots sampled for DDW; -- = not applicable; -% = SE does not exist.

Table 31. Estimated timberland area associated with pieces of down dead wood by species type and decay class, Maine, 1995[a]

Species type	Decay class 1	2	3	All classes
	Thousand acres *SE, n*			
Hardwoods	633.9 *8%, n=93*	1,826.4 *5%, n=263*	1,713.4 *5%, n=249*	4,173.7 *3%, n=606*
Softwoods	1,008.0 *7%, n=146*	3,150.0 *3%, n=459*	3,830.2 *3%, n=564*	7,988.2 *2%, n=1169*
Unknown	59.1 *29%, n=8*	282.9 *13%, n=41*	641.0 *9%, n=93*	983.0 *7%, n=142*
Plots with no DDW	-- *-%, n=0*	-- *-%, n=0*	-- *-%, n=0*	3,710.9 *4%, n=538*
Total	1,701.0 *5%, n=248*	5,259.3 *3%, n=763*	6,184.6 *2%, n=907*	16,855.8 *0.5%, n=2455*

[a]To estimate area associated with a piece, the plot area is partitioned by species type in proportion to biomass within the decay class.

Note: SE = sampling error; n = number of plots sampled for DDW; -- = not applicable; -% = SE does not exist.

Table 32. Volume per acre of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet) 0 - 49	50 - 99	100 - 149	150 - 199	200+	All classes
	Cubic feet per acre *SE, n*					
Aspen/birch	486.7 *13%, n=107*	297.4 *20%, n=52*	326.4 *18%, n=73*	299.5 *14%, n=68*	244.1 *19%, n=31*	359.2 *8%, n=331*
Elm/ash/red maple	198.4 *52%, n=14*	287.1 *27%, n=16*	349.7 *79%, n=10*	804.4 *38%, n=4*	194.7 *-%, n=1*	320.1 *26%, n=45*
Northern hardwoods	463.5 *11%, n=127*	435.9 *10%, n=180*	402.1 *7%, n=343*	396.6 *9%, n=225*	480.8 *14%, n=61*	420.8 *4%, n=936*
Oak/hickory	0.0 *-%, n=0*	476.2 *37%, n=14*	171.6 *45%, n=22*	121.4 *26%, n=17*	329.1 *57%, n=6*	244.1 *25%, n=59*
Oak/pine	101.5 *30%, n=3*	0.0 *-%, n=0*	116.3 *47%, n=3*	150.5 *39%, n=10*	290.4 *77%, n=3*	162.0 *31%, n=19*
Spruce/fir	676.8 *7%, n=160*	513.9 *10%, n=161*	526.8 *8%, n=220*	453.2 *8%, n=197*	499.4 *9%, n=153*	530.4 *4%, n=891*
White/red/other pine	205.2 *44%, n=3*	234.4 *24%, n=21*	263.1 *18%, n=42*	258.0 *28%, n=55*	207.6 *17%, n=54*	239.6 *12%, n=175*
Total	537.4 *6%, n=414*	433.2 *6%, n=444*	413.9 *5%, n=712*	379.3 *5%, n=575*	408.7 *7%, n=309*	429.0 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 33. Volume per acre of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			All owners
	Forest industry	Other private	Public	
	Cubic feet per acre			
	SE, n			
Aspen/birch	496.3 *11%, n=120*	293.1 *11%, n=194*	193.3 *31%, n=17*	359.2 *8%, n=331*
Elm/ash/red maple	363.1 *43%, n=10*	189.2 *22%, n=32*	1,718.2 *47%, n=3*	320.1 *26%, n=45*
Northern hardwoods	480.3 *5%, n=469*	347.1 *7%, n=439*	626.2 *28%, n=28*	420.8 *4%, n=936*
Oak/hickory	21.1 *74%, n=2*	261.0 *25%, n=54*	42.2 *86%, n=3*	244.1 *25%, n=59*
Oak/pine	0.0 *-%, n=1*	181.4 *30%, n=17*	0.0 *-%, n=1*	162.0 *31%, n=19*
Spruce/fir	600.8 *5%, n=453*	450.5 *6%, n=402*	531.3 *17%, n=36*	530.4 *4%, n=891*
White/red/other pine	304.8 *13%, n=36*	222.1 *16%, n=135*	297.4 *53%, n=4*	239.6 *12%, n=175*
Total	524.0 *3%, n=1090*	345.7 *4%, n=1272*	502.7 *15%, n=92*	429.0 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 34. Number of pieces per acre of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet)					All classes
	0 - 49	50 - 99	100 - 149	150 - 199	200+	
	Pieces per acre *SE, n*					
Aspen/birch	257.2 *11%, n=107*	128.2 *20%, n=52*	163.7 *15%, n=73*	139.7 *14%, n=68*	138.3 *14%, n=31*	180.2 *7%, n=331*
Elm/ash/red maple	81.2 *46%, n=14*	158.0 *18%, n=16*	78.1 *43%, n=10*	199.7 *14%, n=4*	66.6 *-%, n=1*	119.0 *16%, n=45*
Northern hardwoods	267.5 *15%, n=127*	189.6 *8%, n=180*	159.9 *6%, n=343*	131.9 *8%, n=225*	162.4 *11%, n=61*	173.6 *4%, n=936*
Oak/hickory	0.0 *-%, n=0*	227.1 *30%, n=14*	73.7 *32%, n=22*	79.5 *32%, n=17*	94.8 *56%, n=6*	113.7 *19%, n=59*
Oak/pine	104.4 *35%, n=3*	0.0 *-%, n=0*	50.2 *61%, n=3*	117.7 *30%, n=10*	289.1 *64%, n=3*	134.2 *29%, n=19*
Spruce/fir	317.9 *9%, n=160*	191.0 *9%, n=161*	222.1 *8%, n=220*	148.0 *8%, n=197*	182.2 *8%, n=153*	210.4 *4%, n=891*
White/red/other pine	166.9 *54%, n=3*	138.9 *21%, n=21*	127.0 *14%, n=42*	141.4 *19%, n=55*	83.2 *14%, n=54*	119.7 *9%, n=175*
Total	275.7 *7%, n=414*	180.5 *5%, n=444*	172.5 *4%, n=712*	137.6 *5%, n=575*	154.2 *6%, n=309*	180.5 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 35. Number of pieces per acre of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			
	Forest industry	Other private	Public	All owners
	Pieces per acre *SE, n*			
Aspen/birch	225.5 *10%, n=120*	154.6 *10%, n=194*	169.2 *28%, n=17*	180.2 *7%, n=331*
Elm/ash/red maple	136.0 *39%, n=10*	106.4 *17%, n=32*	209.2 *45%, n=3*	119.0 *16%, n=45*
Northern hardwoods	187.4 *7%, n=469*	159.0 *6%, n=439*	180.6 *21%, n=28*	173.6 *4%, n=936*
Oak/hickory	15.5 *74%, n=2*	120.4 *20%, n=54*	38.5 *86%, n=3*	113.7 *19%, n=59*
Oak/pine	0.0 *-%, n=1*	150.3 *29%, n=17*	0.0 *-%, n=1*	134.2 *29%, n=19*
Spruce/fir	229.9 *5%, n=453*	190.8 *7%, n=402*	182.9 *20%, n=36*	210.4 *4%, n=891*
White/red/other pine	123.0 *14%, n=36*	118.6 *11%, n=135*	132.4 *32%, n=4*	119.7 *9%, n=175*
Total	206.1 *4%, n=1090*	160.1 *4%, n=1272*	171.2 *12%, n=92*	180.5 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 36. Biomass per acre (dry weight) of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet) 0 - 49	50 - 99	100 - 149	150 - 199	200+	All classes
	Pounds per acre *SE, n*					
Aspen/birch	6,980.7 *14%, n=107*	3,902.2 *19%, n=52*	4,187.7 *16%, n=73*	4,054.7 *14%, n=68*	3,395.8 *20%, n=31*	4,923.6 *8%, n=331*
Elm/ash/red maple	3,330.8 *56%, n=14*	3,817.8 *26%, n=16*	5,048.9 *82%, n=10*	9,521.9 *41%, n=4*	3,778.1 *-%, n=1*	4,470.1 *27%, n=45*
Northern hardwoods	7,363.2 *13%, n=127*	6,663.1 *11%, n=180*	5,841.3 *7%, n=343*	5,915.7 *9%, n=225*	8,247.6 *18%, n=61*	6,382.3 *5%, n=936*
Oak/hickory	0.0 *-%, n=0*	8,007.4 *32%, n=14*	3,383.6 *47%, n=22*	2,062.9 *30%, n=17*	6,248.2 *68%, n=6*	4,363.0 *24%, n=59*
Oak/pine	1,560.3 *32%, n=3*	0.0 *-%, n=0*	2,056.0 *52%, n=3*	2,184.7 *42%, n=10*	3,152.3 *75%, n=3*	2,240.3 *29%, n=19*
Spruce/fir	8,994.2 *9%, n=160*	6,629.8 *11%, n=161*	6,495.6 *8%, n=220*	5,686.7 *8%, n=197*	6,016.9 *10%, n=153*	6,706.7 *4%, n=891*
White/red/other pine	4,437.5 *51%, n=3*	3,081.8 *21%, n=21*	3,770.1 *19%, n=42*	4,254.2 *32%, n=55*	2,952.9 *18%, n=54*	3,600.8 *14%, n=175*
Total	7,685.4 *7%, n=414*	6,090.2 *7%, n=444*	5,632.9 *5%, n=712*	5,284.9 *6%, n=575*	5,587.4 *8%, n=309*	5,968.3 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 37. Biomass per acre (dry weight) of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			
	Forest industry	Other private	Public	All owners
	Pounds per acre			
	SE, n			
Aspen/birch	6,625.8 *12%, n=120*	4,127.4 *11%, n=194*	2,563.7 *33%, n=17*	4,923.6 *8%, n=331*
Elm/ash/red maple	5,529.1 *47%, n=10*	2,494.2 *22%, n=32*	24,148.7 *50%, n=3*	4,470.1 *27%, n=45*
Northern hardwoods	7,308.5 *6%, n=469*	5,288.1 *7%, n=439*	8,740.0 *23%, n=28*	6,382.3 *5%, n=936*
Oak/hickory	370.9 *74%, n=2*	4,671.3 *24%, n=54*	627.0 *86%, n=3*	4,363.0 *24%, n=59*
Oak/pine	0.0 *-%, n=1*	2,508.8 *28%, n=17*	0.0 *-%, n=1*	2,240.3 *29%, n=19*
Spruce/fir	7,425.6 *5%, n=453*	5,910.6 *7%, n=402*	6,507.7 *19%, n=36*	6,706.7 *4%, n=891*
White/red/other pine	3,982.5 *13%, n=36*	3,496.0 *18%, n=135*	4,032.3 *56%, n=4*	3,600.8 *14%, n=175*
Total	7,137.5 *4%, n=1090*	4,958.6 *4%, n=1272*	6,638.9 *15%, n=92*	5,968.3 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 38. Biomass per acre (dry weight) of down dead wood by forest type group, owner group, and decay class, Maine, 1995[a]

Forest type group	Owner group	Decay class 1	Decay class 2	Decay class 3	All classes
		Pounds per acre *SE, n*			
Aspen/birch	Forest industry	1,272.1 *30%, n=120*	2,897.2 *13%, n=120*	2,456.5 *14%, n=120*	6,625.8 *12%, n=120*
	Other private	535.3 *24%, n=194*	2,225.1 *15%, n=194*	1,366.9 *13%, n=194*	4,127.4 *11%, n=194*
	Public	636.7 72%, n=17	960.5 48%, n=17	966.5 42%, n=17	2,563.7 33%, n=17
Elm/ash/red maple	Forest industry	0.0 *-%, n=10*	4,007.0 *63%, n=10*	1,522.0 *76%, n=10*	5,529.1 *47%, n=10*
	Other private	620.2 *55%, n=32*	681.8 *24%, n=32*	1,192.2 *29%, n=32*	2,494.2 *22%, n=32*
	Public	6,890.8 *86%, n=3*	9,112.8 *62%, n=3*	8,145.1 *54%, n=3*	24,148.7 *50%, n=3*
Northern hardwoods	Forest industry	1,466.4 *15%, n=469*	3,199.0 *9%, n=469*	2,643.1 *6%, n=469*	7,308.5 *6%, n=469*
	Other private	966.6 *17%, n=439*	2,468.2 *12%, n=439*	1,853.3 *9%, n=439*	5,288.1 *7%, n=439*
	Public	1,894.5 *48%, n=28*	3,205.6 *34%, n=28*	3,639.9 *41%, n=28*	8,740.0 *23%, n=28*

(Continued)

Table 38. (Continued)

Forest type group	Owner group	Decay class 1	Decay class 2	Decay class 3	All classes
		Pounds per acre *SE, n*			
Oak/hickory	Forest industry	0.0 *-%, n=2*	370.9 *74%, n=2*	0.0 *-%, n=2*	370.9 *74%, n=2*
	Other private	993.8 *36%, n=54*	2,884.7 *29%, n=54*	792.8 *27%, n=54*	4671.3 *24%, n=54*
	Public	0.0 *-%, n=3*	627.0 *86%, n=3*	0.0 *-%, n=3*	627.0 *86%, n=3*
Oak/pine	Forest industry	0.0 *-%, n=1*	0.0 *-%, n=1*	0.0 *-%, n=1*	0.0 *-%, n=1*
	Other private	159.5 *55%, n=17*	1,583.2 *41%, n=17*	766.1 *36%, n=17*	2,508.8 *28%, n=17*
	Public	0.0 *-%, n=1*	0.0 *-%, n=1*	0.0 *-%, n=1*	0.0 *-%, n=1*
Spruce/fir	Forest industry	983.0 *15%, n=453*	3,451.9 *8%, n=453*	2,990.7 *6%, n=453*	7,425.6 *5%, n=453*
	Other private	1,351.3 *14%, n=402*	2,593.9 *10%, n=402*	1,965.4 *8%, n=402*	5,910.6 *7%, n=402*
	Public	960.5 *52%, n=36*	3174.9 *23%, n=36*	2372.3 *20%, n=36*	6507.7 *19%, n=36*

(Continued)

Table 38. (Continued)

Forest type group	Owner group	Decay class 1	2	3	All classes
		Pounds per acre *SE, n*			
White/red/other pine	Forest industry	404.0 *41%, n=36*	1,773.6 *24%, n=36*	1,805 *22%, n=36*	3,982.5 *13%, n=36*
	Other private	1,152.1 *44%, n=135*	1,926.8 *17%, n=135*	417.1 *21%, n=135*	3,496 *18%, n=135*
	Public	606.4 *87%, n=4*	2,651.3 *59%, n=4*	774.6 *42%, n=4*	4032.3 *56%, n=4*
All	Forest industry	1,191.3 *10%, n=1090*	3,223.8 *6%, n=1090*	2,722.3 *4%, n=1090*	7,137.5 *4%, n=1090*
	Other private	1,019.9 *10%, n=1272*	2,369.1 *6%, n=1272*	1,569.6 *5%, n=1272*	4,958.6 *4%, n=1272*
	Public	1,314.4 *31%, n=92*	2,818.2 *18%, n=92*	2,506.3 *22%, n=92*	6,638.9 *15%, n=92*
	Total	1,105.3 *7%, n=2455*	2,757.4 *4%, n=2455*	2,105.6 *3%, n=2455*	5,968.3 *3%, n=2455*

[a]This table is a plot-level (forest type group, owner group) – species-level (decay class) combination; it is listed as a plot-level classification for convenience. Biomass in each decay class is averaged by all the area in the respective owner group of a forest type group.

Note: SE = sampling error; n = number of plots featuring DDW in the category; 0.0 = none found

Table 39. Carbon per acre of down dead wood by forest type group and basal area class, Maine, 1995

Forest type group	Basal area class (square feet) 0 - 49	50 - 99	100 - 149	150 - 199	200+	All classes
	Pounds per acre *SE, n*					
Aspen/birch	3,591.3 *14%, n=107*	1,976.0 *19%, n=52*	2,127.3 *16%, n=73*	2,058.3 *14%, n=68*	1,715.6 *19%, n=31*	2,513.3 *8%, n=331*
Elm/ash/red maple	1,700.3 *56%, n=14*	1,945.9 *26%, n=16*	2,600.5 *82%, n=10*	4,895.9 *41%, n=4*	1,968.4 *-%, n=1*	2,290.0 *28%, n=45*
Northern hardwoods	3,745.1 *13%, n=127*	3,384.8 *11%, n=180*	2,968.2 *7%, n=343*	3,005.2 *9%, n=225*	4,192.4 *18%, n=61*	3,243.3 *5%, n=936*
Oak/hickory	0.0 *-%, n=0*	4,103.4 *33%, n=14*	1,720.2 *48%, n=22*	1,051.5 *30%, n=17*	3,145.0 *67%, n=6*	2,223.6 *24%, n=59*
Oak/pine	790.2 *32%, n=3*	0.0 *-%, n=0*	1,036.9 *51%, n=3*	1,120.0 *42%, n=10*	1,621.1 *75%, n=3*	1,145.2 *29%, n=19*
Spruce/fir	4,649.3 *9%, n=160*	3,426.6 *11%, n=161*	3,356.8 *8%, n=220*	2,938.7 *8%, n=197*	3,111.7 *10%, n=153*	3,466.6 *4%, n=891*
White/red/other pine	2,236.2 *50%, n=3*	1,577.7 *22%, n=21*	1,943.7 *19%, n=42*	2,196.0 *32%, n=55*	1,520.7 *18%, n=54*	1,854.7 *14%, n=175*
Total	3,948.1 *7%, n=414*	3,115.9 *7%, n=444*	2,881.4 *5%, n=712*	2,705.5 *6%, n=575*	2,868.2 *8%, n=309*	3,057.6 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 40. Carbon per acre of down dead wood by forest type group and owner group, Maine, 1995

Forest type group	Owner group			All owners
	Forest industry	Other private	Public	
	Pounds per acre *SE, n*			
Aspen/birch	3,393.4 *12%, n=120*	2,100.4 *11%, n=194*	1,306.2 *33%, n=17*	2,513.3 *8%, n=331*
Elm/ash/red maple	2,806.7 *47%, n=10*	1,275.0 *22%, n=32*	12,494.1 *50%, n=3*	2,290.0 *28%, n=45*
Northern hardwoods	3,710.2 *6%, n=469*	2,687.0 *7%, n=439*	4,506.3 *23%, n=28*	3,243.3 *5%, n=936*
Oak/hickory	184.7 *74%, n=2*	2,380.9 *24%, n=54*	320.4 *86%, n=3*	2,223.6 *24%, n=59*
Oak/pine	0.0 *-%, n=1*	1,282.4 *28%, n=17*	0.0 *-%, n=1*	1,145.2 *29%, n=19*
Spruce/fir	3,837.9 *5%, n=453*	3,055.9 *7%, n=402*	3,357.6 *19%, n=36*	3,466.6 *4%, n=891*
White/red/other pine	2,044.1 *13%, n=36*	1,801.8 *18%, n=135*	2,100.8 *56%, n=4*	1,854.7 *14%, n=175*
Total	3,655.8 *4%, n=1090*	2,539.5 *4%, n=1272*	3,423.2 *15%, n=92*	3,057.6 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 41. Carbon per acre of down dead wood by county and owner group, Maine, 1995

County	Owner group			
	Forest industry	Other private	Public	All owners
	Pounds per acre *SE, n*			
Androscoggin	0.0 *-%, n=0*	1,469.6 *39%, n=16*	0.0 *-%, n=0*	1,469.6 *39%, n=16*
Aroostook	3,182.1 *7%, n=351*	2,904.7 *9%, n=195*	1,681.7 *27%, n=22*	3,027.3 *6%, n=568*
Cumberland	0.0 *-%, n=1*	2,577.3 *36%, n=46*	945.3 *73%, n=2*	2,445.9 *36%, n=49*
Franklin	3,361.9 *11%, n=71*	3,270.9 *15%, n=78*	10,162.7 *-%, n=1*	3,364.6 *9%, n=150*
Hancock	2,849.5 *24%, n=36*	2,029.7 *17%, n=91*	240.9 *80%, n=3*	2,213.5 *14%, n=130*
Kennebec	352.2 *-%, n=1*	4,061.8 *21%, n=49*	0.0 *-%, n=1*	3,912.3 *22%, n=51*
Knox	0.0 *-%, n=0*	688.1 *29%, n=23*	0.0 *-%, n=0*	688.1 *29%, n=23*
Lincoln	0.0 *-%, n=0*	1,455.0 *29%, n=33*	1,061.6 *-%, n=1*	1,443.7 *28%, n=34*
Oxford	3,200.2 *14%, n=45*	2,651.5 *13%, n=117*	4,164.9 *33%, n=15*	2,916.7 *10%, n=177*

(Continued)

Table 41. (Continued)

County	Owner group			
	Forest industry	Other private	Public	All owners
	Pounds per acre *SE, n*			
Penobscot	2,567.7 *12%, n=93*	1,442.6 *11%, n=175*	563.7 *58%, n=4*	1,811.1 *8%, n=272*
Piscataquis	4,777.4 *9%, n=185*	5,003.3 *11%, n=124*	5,850.5 *24%, n=24*	4,939.2 *6%, n=333*
Sagadahoc	0.0 -%, n=0	2,140.0 *35%, n=18*	0.0 -%, n=0	2,140.0 *35%, n=18*
Somerset	4,975.0 *7%, n=209*	2,552.1 *12%, n=107*	4,837.0 *26%, n=10*	4,171.0 *6%, n=326*
Waldo	0.0 -%, n=0	2,364.8 *19%, n=53*	828.7 *29%, n=2*	2,309.6 *19%, n=55*
Washington	2,071.2 *11%, n=99*	1,445.3 *15%, n=101*	1,360.7 *48%, n=7*	1,742.8 *9%, n=207*
York	0.0 -%, n=0	1,707.2 *24%, n=47*	0.0 -%, n=0	1,707.2 *24%, n=47*
Total	3,655.8 *4%, n=1090*	2,539.5 *4%, n=1272*	3,423.2 *15%, n=92*	3,057.6 *3%, n=2455*

Note: SE = sampling error; n = number of plots sampled for DDW; -% = SE does not exist.

Table 42. Volume per acre[a] of down dead wood by species group and large-end diameter class, Maine, 1995

Species group	Diameter class (inches)					All classes
	3 - 4	5 - 8	9 - 14	15 - 19	20+	
	Cubic feet per acre *SE, n*					
Balsam fir	96.2 *4%, n=533*	201.7 *3%, n=526*	384.3 *4%, n=314*	520.4 *5%, n=12*	1,220.2 *8%, n=2*	307.9 *3%, n=933*
Black/white spruce	87.6 *11%, n=44*	189.7 *11%, n=46*	287.9 *9%, n=29*	470.5 *9%, n=2*	0.0 *-%, n=0*	255.6 *10%, n=86*
Red spruce	93.1 *6%, n=280*	182.3 *5%, n=294*	366.9 *4%, n=179*	629.4 *7%, n=22*	1,257.1 *24%, n=2*	301.5 *5%, n=537*
White pine	89.8 *10%, n=53*	183.3 *9%, n=46*	386.7 *11%, n=42*	646.5 *9%, n=5*	2,516.6 *17%, n=7*	423.4 *14%, n=113*
Northern white-cedar	74.6 *5%, n=131*	173.1 *5%, n=188*	436.6 *5%, n=203*	630.5 *7%, n=35*	1,255.2 *10%, n=13*	447.9 *6%, n=377*
Hemlock	54.7 *7%, n=38*	133.4 *7%, n=34*	287.4 *8%, n=28*	748.5 *7%, n=2*	1,311.6 *13%, n=5*	252.8 *13%, n=86*
Other softwoods	65.1 *9%, n=36*	145.3 *7%, n=47*	361.2 *10%, n=27*	977.0 *26%, n=7*	1,121.7 *15%, n=2*	281.1 *14%, n=101*
Total softwoods	109.9 *3%, n=907*	232.0 *3%, n=950*	463.0 *3%, n=684*	665.5 *5%, n=82*	1,639.8 *11%, n=29*	500.0 *3%, n=1472*
Unknown	64.5 *5%, n=156*	151.2 *5%, n=122*	358.2 *7%, n=60*	829.6 *13%, n=9*	1,035.7 *-%, n=1*	197.1 *8%, n=298*

(Continued)

Table 42. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Cubic feet per acre *SE, n*					
Red maple	67.7 *4%, n=149*	144.5 *5%, n=131*	319.0 *7%, n=62*	670.5 *23%, n=6*	834.5 *7%, n=3*	193.6 *7%, n=284*
Sugar maple	64.5 *8%, n=42*	162.4 *14%, n=48*	378.4 *8%, n=39*	757.7 *9%, n=11*	1,045.6 *14%, n=3*	335.4 *11%, n=109*
Yellow birch	59.6 *9%, n=55*	129.9 *7%, n=54*	367.0 *7%, n=51*	787.5 *12%, n=9*	1,161.4 *-%, n=1*	262.0 *9%, n=143*
Paper birch	68.4 *5%, n=175*	147.5 *5%, n=119*	277.2 *7%, n=55*	712.9 *11%, n=6*	1,033.9 *-%, n=1*	171.1 *6%, n=291*
Beech	66.8 *6%, n=87*	158.5 *7%, n=67*	359.4 *7%, n=56*	669.8 *9%, n=6*	0.0 *-%, n=0*	257.5 *8%, n=158*
Aspen	81.9 *11%, n=64*	162.4 *7%, n=67*	280.5 *5%, n=43*	521.9 *5%, n=4*	0.0 *-%, n=0*	224.6 *7%, n=134*
Other hardwoods	85.1 *35%, n=51*	182.4 *22%, n=47*	337.8 *11%, n=33*	668.8 *12%, n=6*	0.0 *-%, n=0*	248.3 *14%, n=115*
Total hardwoods	80.5 *4%, n=538*	172.4 *4%, n=472*	361.4 *3%, n=309*	718.8 *6%, n=47*	976.1 *7%, n=8*	288.4 *4%, n=962*
Total	115.4 *3%, n=1325*	244.9 *2%, n=1307*	484.1 *2%, n=929*	711.0 *4%, n=135*	1,481.4 *10%, n=38*	550.2 *2%, n=1948*

[a]Only area of plots having an occurrence of DDW in the respective species group and diameter class category included.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 43. Volume per acre[a] of down dead wood by species type and decay class, Maine, 1995

Species type	Decay class 1	2	3	All classes
	Cubic feet per acre *SE, n*			
Hardwoods	191.2 *8%, n=202*	215.2 *6%, n=524*	245.6 *4%, n=514*	288.4 *4%, n=962*
Softwoods	270 *7%, n=314*	316.5 *4%, n=878*	355.8 *3%, n=1057*	500 *3%, n=1472*
Unknown	104.3 *12%, n=21*	119.3 *11%, n=96*	215.7 *9%, n=209*	197.1 *8%, n=298*
Total	265.8 *6%, n=472*	327.5 *4%, n=1226*	381.7 *3%, n=1435*	550.2 *2%, n=1948*

[a]Only area of plots having an occurrence of DDW in the respective species type and decay class category included.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 44. Number of pieces per acre[a] of down dead wood by species group and large-end diameter class, Maine, 1995

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Pieces per acre *SE, n*					
Balsam fir	140.5 *5%, n=533*	78.1 *4%, n=526*	49.1 *4%, n=314*	16.8 *8%, n=12*	26.7 *25%, n=2*	141.0 *4%, n=933*
Black/white spruce	145.6 *12%, n=44*	74.2 *13%, n=46*	46.1 *22%, n=29*	16.1 *13%, n=2*	0.0 *-%, n=0*	131.1 *11%, n=86*
Red spruce	130.3 *7%, n=280*	73.1 *6%, n=294*	44.1 *6%, n=179*	25.3 *11%, n=22*	14.8 *10%, n=2*	123.4 *5%, n=537*
White pine	196.1 *12%, n=53*	85.0 *13%, n=46*	53.5 *12%, n=42*	26.8 *26%, n=5*	72.3 *25%, n=7*	151.0 *11%, n=113*
Northern white-cedar	129.6 *7%, n=131*	79.2 *6%, n=188*	60.3 *6%, n=203*	29.9 *8%, n=35*	30.5 *15%, n=13*	120.8 *5%, n=377*
Hemlock	125.9 *10%, n=38*	72.8 *14%, n=34*	37.7 *10%, n=28*	23.3 *24%, n=2*	53.8 *37%, n=5*	100.7 *9%, n=86*
Other softwoods	136.0 *10%, n=36*	73.1 *9%, n=47*	55.4 *18%, n=27*	39.0 *26%, n=7*	48.0 *35%, n=2*	101.6 *9%, n=101*
Total softwoods	170.4 *4%, n=907*	95.4 *3%, n=950*	60.9 *3%, n=684*	27.9 *6%, n=82*	46.2 *15%, n=29*	196.7 *3%, n=1472*
Unknown	105.6 *5%, n=156*	72.8 *7%, n=122*	58.8 *10%, n=60*	41.2 *18%, n=9*	16.2 *-%, n=1*	98.8 *5%, n=298*

(Continued)

Table 44. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Pieces per acre *SE, n*					
Red maple	98.7 *6%, n=149*	58.5 *6%, n=131*	52.8 *17%, n=62*	38.4 *29%, n=6*	23.0 *23%, n=3*	91.5 *6%, n=284*
Sugar maple	113.7 *10%, n=42*	96.2 *18%, n=48*	59.6 *9%, n=39*	36.1 *12%, n=11*	22.3 *14%, n=3*	112.2 *10%, n=109*
Yellow birch	108.8 *9%, n=55*	79.6 *10%, n=54*	50.4 *9%, n=51*	38.6 *15%, n=9*	43.3 *-%, n=1*	92.7 *7%, n=143*
Paper birch	123.8 *6%, n=175*	65.8 *7%, n=119*	49.1 *11%, n=55*	60.9 *33%, n=6*	27.0 *-%, n=1*	112.1 *6%, n=291*
Beech	115.5 *8%, n=87*	71.7 *10%, n=67*	63.6 *10%, n=56*	27.1 *13%, n=6*	0.0 *-%, n=0*	117.8 *7%, n=158*
Aspen	123.9 *10%, n=64*	69.2 *10%, n=67*	39.8 *11%, n=43*	19.0 *10%, n=4*	0.0 *-%, n=0*	106.3 *9%, n=134*
Other hardwoods	138.6 *19%, n=51*	128.2 *51%, n=47*	59.0 *17%, n=33*	31.3 *26%, n=6*	0.0 *-%, n=0*	132.6 *29%, n=115*
Total hardwoods	133.7 *4%, n=538*	84.6 *9%, n=472*	58.5 *5%, n=309*	37.2 *10%, n=47*	25.7 *13%, n=8*	137.2 *4%, n=962*
Total	183.2 *3%, n=1325*	106.7 *3%, n=1307*	68.1 *3%, n=929*	32.7 *6%, n=135*	41.0 *14%, n=38*	231.5 *2%, n=1948*

[a]Only area of plots having an occurrence of DDW in the respective species group and large-end diameter class category included.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 45. Number of pieces per acre[a] of down dead wood by species type and decay class, Maine, 1995

Species type	Decay class 1	Decay class 2	Decay class 3	All classes
	Pieces per acre *SE, n*			
Hardwoods	87.9 *8%, n=202*	111.2 *8%, n=524*	109.0 *4%, n=514*	137.2 *4%, n=962*
Softwoods	91.3 *11%, n=314*	126.7 *4%, n=878*	142.6 *3%, n=1057*	196.7 *3%, n=1472*
Unknown	76.9 *11%, n=21*	82.5 *8%, n=96*	95.1 *6%, n=209*	98.8 *5%, n=298*
Total	101.8 *7%, n=472*	144.6 *4%, n=1226*	158.0 *2%, n=1435*	231.5 *2%, n=1948*

[a]Only area of plots having an occurrence of DDW in the respective species type and decay class category included.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 46. Biomass per acre[a] (dry weight) of down dead wood by species group and large-end diameter class, Maine, 1995

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Pounds per acre *SE, n*					
Balsam fir	1,234.1 *5%, n=533*	2,393.4 *3%, n=526*	4,884.8 *5%, n=314*	7,072.9 *11%, n=12*	14,452.3 *8%, n=2*	3,827.9 *4%, n=933*
Black/white spruce	1,204.7 *11%, n=44*	2,721.0 *11%, n=46*	3,608.4 *9%, n=29*	5,816.8 *24%, n=2*	0.0 *-%, n=0*	3,438.9 *11%, n=86*
Red spruce	1,368.9 *6%, n=280*	2,597.4 *6%, n=294*	5,078.9 *6%, n=179*	9,426.8 *9%, n=22*	16,047.7 *34%, n=2*	4,281.3 *5%, n=537*
White pine	1,297.0 *11%, n=53*	2,545.6 *10%, n=46*	4,621.8 *9%, n=42*	11,210.3 *6%, n=5*	44,084.9 *20%, n=7*	6,230.9 *17%, n=113*
Northern white-cedar	860.9 *5%, n=131*	2,018.2 *5%, n=188*	5,303.0 *6%, n=203*	7,447.4 *9%, n=35*	14,341.0 *16%, n=13*	5,332.2 *6%, n=377*
Hemlock	801.7 *7%, n=38*	1,960.5 *9%, n=34*	4,379.0 *10%, n=28*	11,406.1 *13%, n=2*	19,398.2 *27%, n=5*	3,782.1 *15%, n=86*
Other softwoods	828.8 *10%, n=36*	1,583.3 *6%, n=47*	4,799.7 *13%, n=27*	10,549.8 *23%, n=7*	9,970.2 *11%, n=2*	3,300.0 *13%, n=101*
Total softwoods	1,465.2 *3%, n=907*	2,928.2 *3%, n=950*	5,939.6 *3%, n=684*	8,796.9 *5%, n=82*	23,014.2 *15%, n=29*	6,469.8 *3%, n=1472*
Unknown	958.0 *6%, n=156*	2,092.9 *6%, n=122*	3,985.6 *8%, n=60*	7,847.4 *15%, n=9*	10,417.7 *-%, n=1*	2,441.3 *7%, n=298*

(Continued)

Table 46. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Pounds per acre *SE, n*					
Red maple	1,138.9 *5%, n=149*	2,482.5 *5%, n=131*	4,542.8 *6%, n=62*	13,520.8 *29%, n=6*	13,113.0 *23%, n=3*	3,130.1 *7%, n=284*
Sugar maple	1,224.5 *8%, n=42*	3,507.1 *20%, n=48*	6,385.2 *9%, n=39*	15,020.9 *15%, n=11*	21,376.5 *5%, n=3*	6,376.9 *13%, n=109*
Yellow birch	1,084.1 *12%, n=55*	2,382.6 *8%, n=54*	5,544.0 *9%, n=51*	10,240.3 *13%, n=9*	9,855.8 *-%, n=1*	4,028.3 *8%, n=143*
Paper birch	1,085.1 *6%, n=175*	2,368.0 *6%, n=119*	3,928.0 *7%, n=55*	13,241.4 *12%, n=6*	8,774.1 *-%, n=1*	2,648.0 7%, n=291
Beech	1,394.2 *7%, n=87*	3,317.9 *9%, n=67*	6,805.7 *8%, n=56*	14,378.6 *12%, n=6*	0.0 -%, n=0	5,147.3 *9%, n=158*
Aspen	1,266.2 *11%, n=64*	2,128.1 *8%, n=67*	4,190.1 *7%, n=43*	7,040.0 *14%, n=4*	0.0 -%, n=0	3,205.1 *8%, n=134*
Other hardwoods	1,590.4 *40%, n=51*	3,216.2 *27%, n=47*	5,784.8 *16%, n=33*	11,146.4 *15%, n=6*	0.0 -%, n=0	4,332.1 *17%, n=115*
Total hardwoods	1,396.7 *5%, n=538*	3,010.2 *5%, n=472*	5,753.4 *4%, n=309*	12,683.7 *9%, n=47*	15,113.3 *14%, n=8*	4,843.2 *4%, n=962*
Total	1,682.8 *3%, n=1325*	3,412.3 *3%, n=1307*	6,543.3 *3%, n=929*	10,292.6 *5%, n=135*	20,979.3 *13%, n=38*	7,653.2 *3%, n=1948*

[a]Only area of plots having an occurrence of DDW in the respective species group and large-end diameter class category included.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 47. Biomass per acre[a] (dry weight) of down dead wood by species type and decay class, Maine, 1995

Species type	Decay class 1	2	3	All classes
	Pounds per acre *SE, n*			
Hardwoods	4,985.8 *9%, n=202*	4,285.1 *6%, n=524*	2,750.3 *5%, n=514*	4,843.2 *4%, n=962*
Softwoods	5,475.7 *7%, n=314*	5,043.1 *4%, n=878*	3,225.7 *3%, n=1057*	6,469.8 *3%, n=1472*
Unknown	2,665.9 *13%, n=21*	2,224.3 *10%, n=96*	2,181.5 *9%, n=209*	2,441.3 *7%, n=298*
Total	5,890 *6%, n=472*	5,612.4 *4%, n=1226*	3,682.4 *3%, n=1435*	7,653.2 *3%, n=1948*

[a]Only area of plots having an occurrence of DDW in the respective species type and decay class category included.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 48. Biomass per acre (dry weight) of down dead wood by large-end diameter class, owner group, and decay class, Maine, 1995[a]

Diameter class (inches)	Owner Group	Decay class 1	2	3	All classes
		Pounds per acre *SE, n*			
3-4	Forest industry	142.4 *11%, n=1090*	583.3 *8%, n=1090*	304.9 *6%, n=1090*	1,030.6 *5%, n=1090*
	Other private	157.2 *13%, n=1272*	397.1 *6%, n=1272*	233.6 *6%, n=1272*	787.9 *4%, n=1272*
	Public	202.4 *42%, n=92*	429.4 *27%, n=92*	140.1 *23%, n=92*	772.0 *20%, n=92*
5-8	Forest industry	354.1 *13%, n=1090*	947.0 *7%, n=1090*	784.0 *5%, n=1090*	2,085.1 *5%, n=1090*
	Other private	312.0 *11%, n=1272*	719.7 *6%, n=1272*	477.9 *6%, n=1272*	1,509.6 *4%, n=1272*
	Public	296.8 *39%, n=92*	918.7 *24%, n=92*	772.5 *17%, n=92*	1,987.9 *14%, n=92*
9-14	Forest industry	480.3 *13%, n=1090*	1,236.5 *8%, n=1090*	1,217.0 *6%, n=1090*	2,933.8 *5%, n=1090*
	Other private	397.5 *13%, n=1272*	885.9 *9%, n=1272*	693.2 *8%, n=1272*	1,976.6 *6%, n=1272*
	Public	646.8 *37%, n=92*	1,412.3 *21%, n=92*	1,112.1 *25%, n=92*	3,171.1 *17%, n=92*

(Continued)

Table 48. (Continued)

Diameter class (inches)	Owner group	Decay class 1	2	3	All classes
		Pounds per acre *SE, n*			
15-19	Forest industry	143.5 *30%, n=1090*	328.1 *19%, n=1090*	284.3 *16%, n=1090*	755.9 *12%, n=1090*
	Other private	74.2 *36%, n=1272*	215.8 *27%, n=1272*	127.6 *24%, n=1272*	417.6 *17%, n=1272*
	Public	168.4 *100%, n=92*	57.8 *100%, n=92*	0.0 *-%, n=92*	226.2 *100%, n=92*
20+	Forest industry	71.1 *62%, n=1090*	128.9 *46%, n=1090*	132.0 *28%, n=1090*	332.1 *26%, n=1090*
	Other private	78.9 *75%, n=1272*	150.6 *46%, n=1272*	37.5 *46%, n=1272*	266.9 *35%, n=1272*
	Public	0.0 *-%, n=92*	0.0 *-%, n=92*	481.5 *62%, n=92*	481.5 *62%, n=92*

(Continued)

Table 48. (Continued)

Diameter class (inches)	Owner group	Decay class 1	2	3	All classes
		Pounds per acre *SE, n*			
All	Forest industry	1,191.3 *10%, n=1090*	3,223.8 *6%, n=1090*	2,722.3 *4%, n=1090*	7,137.5 *4%, n=1090*
	Other private	1,019.9 *10%, n=1272*	2,369.1 *6%, n=1272*	1,569.6 *5%, n=1272*	4,958.6 *4%, n=1272*
	Public	1,314.4 *31%, n=92*	2,818.2 *18%, n=92*	2,506.3 *22%, n=92*	6,638.9 *15%, n=92*
	Total	1,105.3 *7%, n=2455*	2,757.4 *4%, n=2455*	2,105.6 *3%, n=2455*	5,968.3 *3%, n=2455*

[a]This table is a plot-level (owner group) –species-level (diameter class, decay class) combination; it is listed as a species-level classification for convenience. Biomass in each decay class is averaged by all the area in the respective owner group.

Note: SE = sampling error; n= number of plots featuring DDW in the category; 0.0 = none found

Table 49. Carbon per acre[a] of down dead wood by species group and large-end diameter class, Maine, 1995

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Pounds per acre *SE, n*					
Balsam fir	643.0 *5%, n=533*	1,247.0 *3%, n=526*	2,545.0 *5%, n=314*	3,685.0 *11%, n=12*	7,529.7 *8%, n=2*	1,994.3 *4%, n=933*
Black/white spruce	627.6 *11%, n=44*	1,417.6 *11%, n=46*	1,880.0 *9%, n=29*	3,030.6 *24%, n=2*	0.0 *-%, n=0*	1,791.7 *11%, n=86*
Red spruce	713.2 *6%, n=280*	1,353.3 *6%, n=294*	2,646.1 *6%, n=179*	4,911.4 *9%, n=22*	8,360.8 *34%, n=2*	2,230.6 *5%, n=537*
White pine	675.7 *11%, n=53*	1,326.3 *10%, n=46*	2,408.0 *9%, n=42*	5,840.6 *6%, n=5*	22,968.2 *20%, n=7*	3,246.3 *17%, n=113*
Northern white-cedar	448.5 *5%, n=131*	1,051.5 *5%, n=188*	2,762.9 *6%, n=203*	3,880.1 *9%, n=35*	7,471.6 *16%, n=13*	2,778.1 *6%, n=377*
Hemlock	417.7 *7%, n=38*	1,021.4 *9%, n=34*	2,281.4 *10%, n=28*	5,942.6 *13%, n=2*	10,106.5 *27%, n=5*	1,970.5 *15%, n=86*
Other softwoods	420.1 *10%, n=36*	797.4 *7%, n=47*	2,430.2 *13%, n=27*	5,360.5 *23%, n=7*	4,965.2 *11%, n=2*	1,668.8 *13%, n=101*
Total softwoods	762.9 *3%, n=907*	1,524.2 *3%, n=950*	3,091.6 *3%, n=684*	4,571.5 *5%, n=82*	11,974.0 *15%, n=29*	3,367.2 *3%, n=1472*
Unknown	477.1 *6%, n=156*	1,042.2 *6%, n=122*	1,984.8 *8%, n=60*	3,908.0 *15%, n=9*	5,188.0 *-%, n=1*	1,215.8 *7%, n=298*

(Continued)

Table 49. (Continued)

Species group	Diameter class (inches) 3 - 4	5 - 8	9 - 14	15 - 19	20+	All classes
	Pounds per acre *SE, n*					
Red maple	567.1 *5%, n=149*	1,236.3 *5%, n=131*	2,262.3 *6%, n=62*	6,733.3 *29%, n=6*	6,530.3 *23%, n=3*	1,558.8 *7%, n=284*
Sugar maple	609.8 *8%, n=42*	1,746.5 *20%, n=48*	3,179.8 *9%, n=39*	7,480.4 *15%, n=11*	10,645.5 *5%, n=3*	3,175.7 *13%, n=109*
Yellow birch	539.9 *12%, n=55*	1,186.5 *8%, n=54*	2,760.9 *9%, n=51*	5,099.7 *13%, n=9*	4,908.2 *-%, n=1*	2,006.1 *8%, n=143*
Paper birch	540.4 *6%, n=175*	1,179.3 *6%, n=119*	1,956.2 *7%, n=55*	6,594.2 *12%, n=6*	4,369.5 *-%, n=1*	1,318.7 *7%, n=291*
Beech	694.3 *7%, n=87*	1,652.3 *9%, n=67*	3,389.3 *8%, n=56*	7,160.6 *12%, n=6*	0.0 *-%, n=0*	2,563.4 *9%, n=158*
Aspen	630.5 *11%, n=64*	1,059.8 *8%, n=67*	2,086.7 *7%, n=43*	3,505.9 *14%, n=4*	0.0 *-%, n=0*	1,596.1 *8%, n=134*
Other hardwoods	792.0 *40%, n=51*	1,601.7 *27%, n=47*	2,880.8 *16%, n=33*	5,550.9 *15%, n=6*	0.0 *-%, n=0*	2,157.4 *17%, n=115*
Total hardwoods	695.6 *5%, n=538*	1,499.1 *5%, n=472*	2,865.2 *4%, n=309*	6,316.5 *9%, n=47*	7,526.4 *14%, n=8*	2,411.9 *4%, n=962*
Total	860.7 *3%, n=1325*	1,747.1 *3%, n=1307*	3,356.7 *3%, n=929*	5,242.7 *5%, n=135*	10,836.9 *13%, n=38*	3,920.8 *3%, n=1948*

[a]Only area of plots having an occurrence of DDW in the respective species group and large-end diameter class category included.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

Table 50. Carbon per acre[a] of down dead wood by species type and decay class, Maine, 1995

Species type	Decay class 1	2	3	All classes
	Pounds per acre *SE, n*			
Hardwoods	2,483 *9%, n=202*	2,134 *6%, n=524*	1,369.6 *5%, n=514*	2,411.9 *4%, n=962*
Softwoods	2,852.8 *7%, n=314*	2,626.2 *4%, n=878*	1,676.7 *3%, n=1057*	3,367.2 *3%, n=1472*
Unknown	1,327.6 *13%, n=21*	1,107.7 *10%, n=96*	1,086.4 *9%, n=209*	1,215.8 *7%, n=298*
Total	3,016.8 *6%, n=472*	2,876.8 *4%, n=1226*	1,885.5 *3%, n=1435*	3,920.8 *3%, n=1948*

[a]Only area of plots having an occurrence of DDW in the respective species type and decay class category included.
Note: SE = sampling error; n = number of plots on which at least one piece occurs; -% = SE does not exist.

*U.S. GPO:2000-650-336/20014

Heath, Linda S.; Chojnacky, David C. 2001. **Down dead wood statistics for Maine timberlands, 1995.** Resour. Bull. NE-150. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 80 p.

Down dead wood (DDW) is important for its role in carbon and nutrient cycling, carbon sequestration, wildfire behavior, plant reproduction, and wildlife habitat. DDW was measured for the first time during a forest inventory of Maine by the USDA Forest Service in 1994-1996. Pieces greater than 3 feet long and greater than 3 inches in diameter at point of intersection were measured on line transects located on standard forest inventory plots. Large piles of DDW were sampled using the standard circular plot. The amount of DDW is presented in terms of totals and per area estimates for volume, number of pieces, biomass, and carbon, summarized by attributes such as forest type group, owner group, species, and diameter class. This inventory indicates Maine's timberlands contain approximately 7.2 billion cubic feet (± 3%) in DDW pieces, and an additional 1.6 billion cubic feet (± 28%) in piles of DDW. DDW in piles and pieces contains 68.9 billion pounds (± 8%) of carbon. This is equivalent to an average of 8,030 pounds of DDW biomass per acre.

Keywords: Coarse woody debris (CWD), woody material, nontimber products, forest carbon

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